Property of the

Lancaster City and County
Medical Society

No.........................

1151

151

THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

EDITED BY

ISAAC HAYS, M.D.,

SURGEON TO WILLS HOSPITAL,
FELLOW OF THE PHILADELPHIA COLLEGE OF PHYSICIANS; MEMBER OF THE
AMERICAN MEDICAL ASSOCIATION; OF THE AMERICAN PHILOSOPHICAL SOCIETY; OF THE
ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA,
&C. &C. &C.

NEW SERIES.

VOL. XVIII.

PHILADELPHIA:
LEA & BLANCHARD.
LONDON:
WILEY & PUTNAM, AND JOHN MILLER.
....
1849.

69444

Entered according to Act of Congress, in the year 1849, by

LEA AND BLANCHARD,

in the Clerk's Office of the District Court of the Eastern District of Pennsylvania.

SMITHSONIAN
LIBRARY

PHILADELPHIA:
T. K. AND P. G. COLLINS, PRINTERS.

610.5
A513
v.18
Med.

TO READERS AND CORRESPONDENTS.

Dr. Norris's Statistics of Ligature of the Femoral Artery, Dr. Mettauer's paper on Ligature of the Common Carotid, Dr. Atlee's Cases of Ovariotomy, and Dr. McSherry's Remarks on the Influence of Sea Life on Health, will appear in our next Number.

The following works have been received:—

Human Anatomy. By Jones Quain, M.D. Edited by Richard Quain, F. R. S., and William Sharpey, M. D., F. R. S., &c. &c. First American, from the fifth London edition. Edited by Joseph Leidy, M. D. Two vols., with over 500 illustrations. Philadelphia, Lea & Blanchard, 1849. (From the Publishers.)

Parturition, and the Principles and Practice of Obstetrics. By Tyler Smith, M. D. Philadelphia, Lea & Blanchard, 1849. (From the Publishers.)

Practical Pharmacy: the Arrangements, Apparatus, and Manipulations, of the Pharmaceutical Shop and Laboratory. By Francis Mohr, Ph. D., Assessor Pharmacie of the Royal Prussian College of Medicine, Coblentz; and Theophilus Redwood, Prof. Chem. and Pharm. to the Pharmaceutical Society of Great Britain. Edited, with extensive additions, by Wm. Procter, Jr., Prof. of Pharm. in the Philada. Coll. of Pharmacy. Illustrated by 500 engravings on wood. Philadelphia, Lea & Blanchard, 1849. (From the Publishers.)

Chemical Technology: or, Chemistry applied to the Arts and to Manufactures. By Dr. F. Knapp, Prof. at the University of Giessen. Translated and edited, with numerous notes and additions, by Dr. Edmund Ronalds and Dr. Thomas Richardson. First American edition, with notes and additions, by Prof. Walter R. Johnson. Vol. II. Illustrated with 246 engravings on wood. Philadelphia, Lea & Blanchard, 1849. (From the Publishers.)

Elements of Electro-Biology, or the Voltaic Mechanism of Man; or Electro-Pathology, especially of the Nervous System; and of Electro-Therapeutics. By Alfred Smee, F.R.S. Illustrated with numerous engravings on wood. London, 1849. (From the Author.)

Recherches sur la Structure des Organes de l'Homme et des Animaux les plus connus. Par C. F. Boucher, M. D., Amiens. Avec 104 figures. Paris, 1848. (From the Author, through Dr. Ross.)

Treatise upon the Nature and Treatment of Morbid Sensibility of the Retina, or Weakness of Sight. Being the dissertation to which the Boylston Medical Prize for 1848 was awarded upon the following question: "What is the nature and best mode of treatment of that affection of the eyes commonly called morbid sensibility of the retina?" By John H. Dix, M. D., M.S.S. Boston, 1849. (From the Author.)

A Dictionary of Dental Science. Biography, Bibliography, and Medical Terminology. By Chapin A. Harris, M. D., D.D.S., Prof. of the Princ. and Pract. of Dental Surgery in the Baltimore College, &c. &c. Philadelphia, Lindsay & Blakiston, 1849. (From the Publishers.)

Epidemic Cholera; its History, Causes, Pathology, and Treatment. By G. B. Coventry, M. D., Prof. of Obst. and Med. Jurisp. in the Med. Inst. Geneva Coll., &c. &c. Buffalo, Geo. H. Derby & Co., 1849. (From the Publishers.)

Effects of Chloroform and of strong Chloric Ether as Narcotic Agents. By John C. Warren, M. D., &c. Boston, 1849. (Reprinted from Amer. Journ. Med. Sci., April 1849.)

A Practical Compendium of Midwifery: being the course of lectures on midwifery, and on the diseases of women and infants, delivered at St. Bartholomew's Hospital, by the late Robert Gooch, M. D. Prepared for publication by George Skinner, M.R.C.S.L. Fourth American edition. Philadelphia, E. Barrington and Geo. D. Haswell, 1849. (From the Publishers.)

Chemical Analysis, Qualitative and Quantitative. By Henry M. Noad, Lecturer on Chemistry, &c. With numerous additions, by Campbell Morfit, Pract. and Analyt. Chemist, with illustrations. Philadelphia, Lindsay & Blakiston, 1849. (From the Publishers.)

Anæsthesia: or the Employment of Chloroform and Ether in Surgery, Midwifery, &c. By J. Y. Simpson, M. D., F.R.S.E., Prof. of Midwifery in the Univ. of Edinburgh, &c. &c. Philadelphia, Lindsay and Blakiston, 1849. (From the Publishers.)

The Maternal Management of Children, in Health and Disease. By Thomas Bull, M. D., M.R.C.P. From the third London edition. Philadelphia, Lindsay & Blakiston, 1849. (From the Publishers.)

A Manual of Auscultation and Percussion, by M. Barth, Agrégé of the Faculty of Medicine of Paris, &c. &c., and Henry Roger, Physician to the Bureau Central of the Parisian Hospitals, &c. &c. Translated, with additions, by Francis G. Smith, M. D., Lect. on Phys. in the Philada. Association for Medical Instruction, &c. Second edition. Philadelphia, Lindsay & Blakiston, 1849.

Summary of the Transactions of the College of Physicians of Philadelphia. From Feb. 6th, to April 3d, 1849, inclusive.

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by Joseph Parrish, M. D. April, 1849.

The Quarterly Journal of the Chemical Society of London. Edited for the Society, by Edmund Ronalds, Ph. D. April, 1849.

Proceedings of the State Medical Convention, held in Macon, March, 1849, and Constitution of the Medical Society of the State of Georgia. Macon, 1849.

Report of the Sub-Committee on Cleansing the City, (presented to the general committee June 5th, 1849,) relative to the best means of securing the health and cleanliness of the city. Philadelphia, 1849. (From the Councils.)

Report No. 114. House of Representatives Minority Report. W. T. G. Morton. Washington, 1849.

An Inaugural Address, delivered before the New York Academy of Medicine Feb. 7th, 1849. By Valentine Mott, M. D. To which is prefixed an address by Dr. J. W. Francis to the President elect. New York, 1849.

A Report on Epidemic Cholera, read before the Medical Society of Frederick County, by Wm. Waters, M. D. Frederick, 1849. (From Dr. S. Tyler.)

Address on the Progress and Dignity of the Medical Profession. Delivered before the Trustees, Faculty, Students, and Friends of the Starling Medical College, at its annual commencement, Feb. 17th, 1849. By B. T. Cushing, Esq. Published by request of the Trustees and Faculty. Columbus, 1849.

Speeches of Defendants' Counsel, and the Charge of Judge Burnside, in the case of Hinchman *vs.* Richie et al. Reported by Oliver Dyer and Dennis F. Murphy. Philadelphia, 1849.

Cholera: A Series of Letters communicated to "The Standard and Reformer." By Frank A. Ramsey, M. D., late Prof. Mat. Med. and Therap., in Memphis Med. College. Knoxville, 1849.

The History of the Mild Yellow Fever which prevailed in the city of Natchez in 1848, with Observations respecting its Character and Natural Mode of Cure; to which are appended, from various authors, descriptions and notices of that disease; of dengue, and of inflammation of the stomach and bowels. By C. W. Stone, M. D., of Natchez. Vidalia, 1849.

Treatise on Epidemic Cholera: being Lectures delivered under the authority of the Faculty of Medicine of Paris. By Ambroise Tardieu, M. D. Translated from the French by S. L. Bigelow, M. D. With an Appendix by a Fellow of the Massachusetts Medical Society. Boston, Ticknor, Reed & Fields, 1849.

A Theoretical and Practical Treatise on Human Parturition. By H. Miller, M. D., Prof. of Obs. &c. in Med. Dep. University of Louisville. Louisville, 1849. (From the Author.)

Catalogue and Circular of the Medical Department of the University of the State of Missouri. Session 1848–49. St. Louis, 1849.

Catalogue of the Class in the Philada. College of Medicine, for the session 1848–49, and the annual announcement for the session 1849. Philadelphia, 1849.

Catalogue of the Officers and Students of Bowdoin College, and the Medical School of Maine. Spring Term, 1849.

Catalogue of the Medical Department of Transylvania University, with a list of the Graduating Class, and also the announcement for the Session of 1849–1850. Lexington, 1849.

Valedictory Address to the Medical Class of the Transylvania University. By E. L. Dudley, M.D., Prof. Gen. and Path. Anat. and Phys. Lexington, 1849. (From the Author.)

Valedictory Address to the Graduating Class of the Medical Department of Pennsylvania College at the annual commencement, March 7, 1849. By Henry S. Patterson, M.D., Prof. Mat. Med. and Therap. Philadelphia, 1849. (From the Author.)

Address to the Graduating Class of Rush Medical College. Session 1848–49. By Daniel Brainard, M. D., President of the College. Chicago, 1849. (From the Author.)

Annual Report of the Trustees of the State Library of the State of New York, made to the Legislature Jan. 15, 1849. Albany, 1849. (From T. R. Beck, M. D.)

Fracture Tables, showing the results of treatment in 136 cases. By Dr. F. H. Hamilton. Buffalo, 1849. (From the Author.)

Valedictory Address to the Graduating Class of Geneva Medical College at the public commencement, Jan. 23d, 1849. By Chas. A. Lee, M. D., Prof. Gen. Path. and Mat. Med. Buffalo, 1849. (From the Author.)

Service-Pipes for Water: an investigation made at the suggestion of the Board of Consulting Physicians, of Boston, by E. N. Horsford Rumford, Prof. in the Univ. of Cambridge. From the Proceedings of the Academy of Arts and Sciences. Cambridge, 1849. (From the Author.)

The Philosophy of Medicine. An Address delivered before the Graduates of the Medical College of Georgia, on the 20th of March, 1849. By John Le Conte, M. D., Prof. Nat. Philos. and Chem. in Franklin Coll. Univ. of Georgia. Augusta, 1849.

Catalogue of the Plants, Native and Naturalized, collected in the Vicinity of Cincinnati (during the years 1834–44). By Thomas G. Lea. Philadelphia, 1849.

Remarks on the Construction of the Obstetrical Forceps, with a description of an instrument employed by Jas. P. White, M. D., Prof. of Obstetrics in Med. Dep. of Univ. of Buffalo. From May number of Buffalo Journal.

The following Journals have been received in exchange:—

Revue Médico-Chirurgicale de Paris. Sous la direction de M. Malgaigne. April, May, 1849.

Gazette Médicale de Paris. Oct., Nov., Dec., 1848, (except No. 47,) Jan. and Feb. 1849.

Revue Médicale Française et Etrangère. Par J. B. Cayol. Sept., Oct., Nov., Dec., 1848.

Journal de Médecine et de Chirurgie pratiques. Par Lucas-Championniere. Oct., Nov., Dec., 1848.

Annales de Thérapeutique Médicale et Chirurgicale et de Toxicologie. Par M. le Docteur Rognetta. Sept., Oct., Nov., Dec., 1848, Jan. 1849.

Journal des Connaissances Médico-Chirurgicales. Par Le Dr. A. Martin-Lauzer. Nov., Dec., 1848, Jan., Feb., March, 1849.

Journal des Connaissances Médicales pratiques et de Pharmacologie. Oct., Nov., Dec., 1848, Jan., Feb., 1849.

Annales Médico-Psychologiques, Journal de l'Anatomie, de la Physiologie, et de la Pathologie du Système Nerveux. Par MM. les Docteurs Baillarger, Cerise, et Longet. July, Sept., Nov., 1848.

Journal de Pharmacie et de Chimie, par MM. Boullay, J. P. Boudet, Bussy, Soubeiran, Henry, F. Boudet, Cap, Boutron-Charlard, Fremy, et Guibourt. Suivi d'une Compte Rendu des Traveaux de Chimie, par le Charles Gerhardt. Oct., Nov., Dec., 1848.

La Lancette Française, Gazette des Hôpitaux, civils et militaires. Oct., Nov., Dec., 1848, except No. 143.

The Edinburgh Medical and Surgical Journal, April, 1849.

The London Medical Gazette. March, April, May, 1849.

Provincial Medical and Surgical Journal. Edited by Robert J. N. Streeten, M.D. Foreign editor, Wm. H. Ranking, M.D. March, April, May, 1849.

Monthly Journal and Retrospect of the Medical Sciences. Edited by Geo. E. Day, F.R.C.L., Alex. Fleming, M.D., and W. T. Gairdner, M.D. April, May, June, 1849.

Dublin Medical Press. March, April, May, 1849.

London Journal of Medicine, a monthly record of the Medical Sciences. March, April, May, 1849.

The British and Foreign Medico-Chirurgical Review. April, 1849.

The Dublin Quarterly Journal of Medical Science. May, 1849.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by Joseph Carson, M.D., and Wm. Procter, Jr., &c. April, 1849.

The Western Journal of Medicine and Surgery. Edited by L. P. Yandell, M.D. April, May, June, 1849.

Buffalo Medical Journal and Monthly Review. Edited by Austin Flint, M.D. April, May, June, 1849.

St. Louis Medical and Surgical Journal. Edited by Drs. Linton, Moore, McPheeters, and McDowell. March, April, 1849.

The New Orleans Medical and Surgical Journal. Edited by A. Hester, M.D., May, 1849.

The Annalist; A Record of Practical Medicine in the City of New York. Edited by N. S. Davis, M.D. April, May, June, 1849.

The Charleston Medical Journal and Review. Edited by Dr. P. C. Gaillard and H. W. De Saussure. May, 1849.

The New York Journal of Medicine and the Collateral Sciences. May, 1849.

The American Journal and Library of Dental Science. Edited by Dr. A. Harris, A. Westcott, and W. H. Dwinnell. April, 1849.

The Medical Examiner and Record of Medical Science. Edited by Francis G. Smith, M.D., and David H. Tucker, M.D. April, May, June, 1849.

Southern Medical and Surgical Journal. Edited by Paul F. Eve, M.D. April, May, June, 1849.

The Ohio Medical and Surgical Journal. Edited by John Butterfield, M.D. March, May, 1849.

The Boston Medical and Surgical Journal. April, May, June, 1849.

The American Journal of Insanity. Edited by the officers of the New York State Lunatic Asylum, Utica. April 1849.

The Northwestern Medical and Surgical Journal. Edited by Drs. Herrick and Evans. Chicago, 1849. March, May, 1849.

The Western Lancet and Hospital Reporter. Edited by L. M. Lawson, M.D., and J. P. Harrison, M.D. April, May, June, 1849.

The American Journal of Science and the Arts. Edited by Prof. B. Silliman, and B. Silliman, Jr., and James D. Dana. May, 1849.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M.D., Editor of the American Journal of the Medical Sciences, care of Messrs. Lea & Blanchard, Philadelphia. Parcels directed as above and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or to Wiley & Putnam, *New York;* or W. D. Ticknor, *Boston;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XXXV. NEW SERIES.

JULY, 1849.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. A brief Account of the Origin, Progress, Symptoms, Mortality, and Treatment of Pestilential Cholera, as it occurred in the Mississippi Valley, and especially in the city of Memphis. By Lewis Shanks, M. D., of Memphis, Tenn. - - - - - - - - - 13

II. Extracts from the Records of the Boston Society for Medical Improvement. By Samuel Parkman, M. D., Secretary. - - - - - 35

III. Lithotrity and Lithotomy, with the use of Ether in those operations. By J. Mason Warren, M. D. - - - - - - - - - 47

IV. On Nitrate of Silver in Jaundice. By J. F. Peebles, M. D., of Petersburgh, Va. - - - - - - - - - - - 59

V. Notes of Hospital Cases. By Henry Hartshorne, M. D., of Philadelphia. - - - - - - - - - - - 63

VI. On the use of the Oxide of Silver in certain forms of Menorrhagia, with Cases and Remarks. By J. J. Thweatt, M. D., Petersburg, Va. - 69

VII. Congenital Phimosis. By M. G. Delaney, M. D., Surgeon U. S. Navy. 72

VIII. Traumatic Tetanus treated with Chloroform. Recovery.—Read before the "Boston Society for Observations in Medicine and the Collateral Sciences." By Edward H. Clarke, M. D. - - - - - - 75

IX. On the Influence upon Health of the Introduction of Tea and Coffee in large proportion into the Dietary of Children and the Labouring Classes. By Samuel Jackson, M. D., Professor of the Institutes of Medicine in the University of Pennsylvania. - - - - - - 79

X. Surgical Cases. By James D. Trask, M. D., Whiteplains, Westchester County, New York. - - - - - - - - 86

XI. On the Action of Poisons. By James Blake, M. D., F. R. C. S. E., Professor of Anatomy at the St. Louis University. - - - - - 97

XII. On Contagion. By Samuel Henry Dickson, M. D., Prof. of Theory and Practice of Medicine in the University of the City of New York. - 107

XIII. Contributions to Pathological Anatomy. By Jno. Neill, M. D., Demonstrator of Anatomy in the University of Pennsylvania. [With five wood cuts.] - - - - - - - - - 118

ART. PAGE

XIV. Case of Cæsarian Operation. By A. B. Shipman, M. D., Professor of Surgery in Indiana Medical College. - - - - - - 122

XV. Complete Inversion and Expulsion of the Uterus. By Thomas H. Yardley, M. D., Consulting Physician to the Lying-in Department of the Northern Dispensary of Philadelphia, &c. - - - - 126

XVI. Two Cases of Spontaneous Luxation of the Hip Joint. By Henry A. Ramsay, M. D., Raysville, Ga. - - - - - - - 127

REVIEWS.

XVII. Practical Treatise on Ventilation. By Morrill Wyman. 12mo. pp. 404. Boston: Jas. Munroe & Co., 1846.

Report of a Committee of the American Academy of Arts and Sciences on Ventilation and Chimney-tops. 8vo. pp. 28. Cambridge: Metcalf & Co., 1848.

Practical Methods of Ventilating Buildings. By Luther V. Bell, M. D., LL. D., Honorary Member of the New York State Medical Society, etc., Physician and Superintendent of the McLean Asylum for the Insane—a department of the Massachusetts General Hospital. 8vo. pp. 131. Boston: Damrell & Moore, 1848.

Ventilation of School-Houses of the City of Boston. Report of Committee. 8vo. pp. 43. Boston: J. H. Eastburn, 1848.

Ventilation Illustrated: a Tract for the Schools of Rich and Poor. 12mo. pp. 36; second edition. London: John Churchill, 1848.

Uses and Abuses of Air: showing its Influence in Sustaining Life and Producing Disease; with Remarks on the Ventilation of Houses. Parts I. and II.; 12mo. pp. 144. New York: J. S. Redfield, 1848. - - 129

XVIII. On the Influenza, or Epidemic Catarrhal Fever of 1847–8. By Thomas Bevill Peacock, M. D., Physician to the Royal Free Hospital, &c. London, 1848: pp. 182. - - - - - - 148

BIBLIOGRAPHICAL NOTICES.

XIX. Practical Pharmacy. The Arrangements, Apparatus, and Manipulations of the Pharmaceutical Shop and Laboratory. By Francis Mohr, Ph. D., and Theophilus Redwood: edited, with extensive additions, by Wm. Procter, Jr. Illustrated by 500 engravings on wood. Philadelphia: Lea and Blanchard, 1849. - - - - - - - 155

XX. Human Anatomy. By Jonas Quain, M. D. Edited by Richard Quain, M. D., and William Sharpey, M. D., F.R.S., Professors of Anatomy and Physiology, in University College, London. First American, from the fifth London edition. Edited by Joseph Leidy, M. D. In two volumes, with over 500 illustrations. Philadelphia: Lea & Blanchard, 1849. - - - - - - - - - - 157

XXI. Seventh Annual Report to the Legislature, relating to the Registry and Returns of Births, Marriages, and Deaths, in Massachusetts, for the year ending April 30th, 1848. By Wm. B. Calhoun, Secretary of the Commonwealth. 8vo.: pp. 56.

Report of the Secretary of State, of the Number of Births, Marriages, and Deaths [in the State of New York] for the year 1847. 8vo.: pp. 56. - 163

XXII. On the Cryptogamous Origin of Malarious and Epidemic Fevers. By J. K. Mitchell, A. M., M. D., Professor of Practical Medicine in the Jefferson Medical College of Philadelphia. Philadelphia, 1849: 8vo. pp. 137. Lea & Blanchard. - - - - - - - 168

XXIII. A Practical Treatise on the Domestic Management and Most Important Diseases of Advanced Life; with an Appendix, containing a Series of Cases illustrative of a new and successful mode of treating Lumbago and other forms of Chronic Rheumatism, Sciatica and other Neuralgic Affections, and certain forms of Paralysis. By George Day,

ART. PAGE
M. D., Fellow of the Royal College of Physicians, and Physician to the Western General Dispensary. 8vo. pp. 226. Philadelphia: Lea & Blanchard, 1849. - - - - - - - - 175
XXIV. Parturition, and the Principles and Practice of Obstetrics. By W. Tyler Smith, M. D., Lond.; Lecturer on Obstetrics in the Hunterian School of Medicine. 12mo. pp. 395. Lea & Blanchard: 1849. - 179
XXV. Reports, for 1848, of Institutions for the Insane in the United States:
1st. Of the McLean Asylum for the Insane, Somerville, Massachusetts.
2d. The State Lunatic Hospital, Worcester, Massachusetts.
3d. The Boston Lunatic Hospital, South Boston, Massachusetts.
4th. The Butler Hospital for the Insane, Providence, Rhode Island.
5th. The State Lunatic Asylum, Utica, New York.
6th. The State Lunatic Asylum, Trenton, New Jersey.
7th. The Pennsylvania Hospital for the Insane, near Philadelphia, Pa.
8th. The Western Asylum, Staunton, Virginia.
9th. The Hospital for the Insane, Indianapolis, Indiana. - - - 186
XXVI. An Account of some of the most important Diseases of Women. By Robert Gooch, M. D., with illustrations. Second edition. Philadelphia: Ed. Barrington and Geo. D. Haswell, 1849. 8vo. pp. 322.
A Practical Compendium of Midwifery; being the Course of Lectures on Midwifery, and on the Diseases of Women and Infants, delivered at St. Bartholomew's Hospital, by the late Robert Gooch, M. D. Prepared for publication by George Skinner, M. R. C. S. Fourth American edition. Philadelphia: Ed. Barrington & Geo. D. Haswell, 1849. 8vo. pp. 339. 196
XXVII. Anæsthesia, or the Employment of Chloroform and Ether in Surgery, Midwifery, &c. By J. Y. Simpson, M. D., F. R. S. E. Professor of Midwifery in the University of Edinburgh, &c. Philadelphia: Lindsay & Blakiston, 1849. 8vo. pp. 248. - - - - - - 196

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE
1. On the Development and Functions of the Spermatozoa. By Drs. Wagner and Leuckardt. - 197
2. Hassal's Parasite. - - - 197
3. Structure of the Papillæ of the Tongue. By Mr. Hassall. - 198
4. On the Minute Structure and Mode of Contraction of Voluntary Muscular Fibre. By W. Murray, Dobie, Esq. - - 196

Organic Chemistry.

5. Chemical Pathology of Diarrhœa. By Oesterlin. - - 199
6. On the Source of Sugar in the Animal Economy. By Dr. Bernard. - - - - - - 201

MATERIA MEDICA AND PHARMACY.

PAGE
7. On Sugar as an Antiphrodisiac. By M. Provençal. - - - - 203
8. Physiological Action of Nitrate of Potassa. By F. Loffler. - 204
9. Experiments on Senna and Argol Leaves. By Heberlein. - 205
10. Sulphate of Amorphous Quinine. By Mr. Bullock. - - 205
11. On the Employment of Nitrate of Silver as a Vesicant. By M. Delvaux. - - - - - - 206
12. The Mechanical Leech of MM. Alexandre & Co. of Paris. - 207

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. On the Analogy and Differences between Tubercle and Scrofula. By M. A. Legrand. - 207
14. On Spinal Meningitis. By M. Piorry. - - - - - - 208
15. Causes and Morbid Anatomy of Mental Diseases. By Dr. John Webster. - - - - - 209
16. On Polydipsia. By M. Vigla. 210
17. Effects of Cauterization in Inoculation with Virulent Poisonous Agents. By M. Parchappe. 211
18. Period required for the Absorption of Virus. By M. Renault. - - - - - - 211
19. On the Simultaneous Development of Variola and Vaccinia. By MM. Herard and Bousquet. 212
20. On the Influence of Physical Agents in Variola. By M. Serres. - - - - - - - 213
21. Nux Vomica in Intestinal Obstructions. By Dr. Ossieur. - 213
22. Extractum Cotyledonis Umbilici in Epilepsy. By Dr. Joseph Bullar. - - - - - - 214

SURGICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL SURGERY.

23. Pathology and Treatment of the Deafness attendant upon Old Age. By Mr. Joseph Toynbee. 215
24. Traumatic Pleuro-Pneumonia. By M. Malgaigne. - - - - 215
25. On the Utility and Necessity of performing Paracentesis Thoracis in certain cases of Pneumothorax. By Hamilton Roe, M.D. - - - - - - 216
26. Use of Nitrate of Silver for White Swellings, Hydrarthrosis, and Venereal Bubo. By M. Decaisne. - - - - - - 217
27. On Valvular Obstructions as a Cause of Retention of Urine. By M. Mercier. - - - - - 218
28. On the Evils attending Excision of the Tonsils. By Mr. Harvey. - - - - - - 219
29. Arterial Compression as an Antiphlogistic. By Dr. Henroz de Marche. - - - - - 219
30. Treatment of Gonorrhœa by Vinum Colchici. By Dr. Ficimus. - - - - - - - 220
31. Case of Exfoliation of the Anterior Arch of the Atlas. By Robert Wade, Esq. - - - 220
32. New Variety of Luxation of the Humerus. By M. Malgaigne. 221
33. Staphyloraphy. By M. Gerdy. 221
34. Ligature of the External Iliac Artery. By T. W. Nunn, Esq. 222
35. Femoral Aneurism. By Mr. Tufnell. - - - - - - 222
36. Popliteal Aneurism communicating with the Knee Joint. Amputation of the Thigh. By Mr. Adams. - - - - - 226
37. Popliteal Aneurism cured by Compression. By Mr. Tufnell. 228
38. Remarks on the Objections which have been made against the Use of Pressure for the Cure of Aneurism. By Mr. Tufnell. 232
39. Cases of Aneurism cured by Compression. By Dr. Edward Hutton. - - - - - - 235

OPHTHALMOLOGY.

40. On Inflammation of the Eye from Injury. By Dr. Jacob. - 236
41. Ocular Apoplexy. By M. Malgaigne. - - - - - - 241
42. Case of Traumatic Lesion of the Globe of the Eye. By Dr. Rivaud Landreaux. - - - 242

MIDWIFERY.

43. Iodine in Congestion and Erosion of the Cervix Uteri. By Dr. Churchill. - - - - - 243
44. Tincture of Indian Hemp in Sanguineous Uterine Discharges. By Dr. Churchill. - - - 244
45. Absence of Urea in the Liquor Amnii and Fœtal Urine. By Dr. A. H. McClintock. - - 245
46. Urethritis in the Female. By Dr. McClintock. - - - 246
47. Puerperal Tetanus. By Dr. Pirre-Aubinais. - - - 246
48. Expulsion of a Bag of Waters before the Rupture of the Membranes. By Dr. Alexander Wood. - - - - - - 247
49. Twins born at an interval of twenty-one days. - - - 247
50. Case in which the Liquor Amnii and the Meconium were both bloody. By Dr. Moir. - - 247
51. On Prolapsus Uteri. By Professor Hohl. - - - - - 248
52. Case of Hydrometria occurring in an Unimpregnated Uterus. By Dr. Grandidier. - - - 249
53. Prolapsus of the Funis during Labour. By Dr. Hoffman. - 249
54. Spontaneous Rupture of the Uterus—Recovery. By James Church, Esq. - - - - - 250
55. Subacute Inflammation of the Ovaries and of the Fallopian Tubes as one of the Causes of Sterility. By Dr. Tilt. - - 250
56. Cases of Sudden Death after Delivery. By Dr. McCowan. - 251

CHOLERA.

57. Cholera. - - - - - 252
58. Pathological Appearances in Cholera. By M. Virchow. - 252
59. Hypertrophy of Peyer's Glands in Cholera. - - - - - 252
60. On the Pathological Condition of the Blood in Cholera. By A. B. Garrod, M. D. - - - 253
61. Analyses of the Blood in Cholera. By Dr. William Robertson. 256
62. On the Liquids ejected in Cholera. By M. Mialhe. - 257
63. Pathology and Therapeutics of Cholera. By Dr. Garrod. - 258
64. Cholera. By Mr. Streeter. - 259
65. Effect of Remedies in Cholera. 261
66. Treatment of Asiatic Cholera by Internal and External Means. By M. Blatin. - - - - 261
67. Treatment of Cholera in six of the Parisian Hospitals. - - 262
68. Results of the various kinds of Treatment of Cholera adopted in Russia. By Dr. Mackenzie. - 272

ANÆSTHETIC AGENTS.

69. Death from Chloroform—Means to be employed to prevent a fatal effect from an overdose. By Dr. Snow. - - 274
70. Chloroform. By Dr. John Snow. - - - - - 278

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

71. Poisoning by Sulphate of Zinc. By Professor Platner and Pignacca. - - - - - - 279
72. Accidental Poisoning by Tincture of Muriate of Iron. By Sir James Murray. - - - 280
73. Effects of the use of Arsenic in Agriculture. Poisoned Game. By Dr. Fuller. - - - - 281

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Abstract of a Paper on "The Microscopical Appearances presented in the Intestinal Discharges and Muscular Fibres of a patient who died of Epidemic Cholera." By Waldo (I.) Burnett. - - - - - - - 283
Fourth Meeting of "The Associ-

PAGE
ation of Medical Superintendents of American Institutions for the Insane," at Utica, N. Y. - - 284
Condyloid Process of the Occiput. 289
Cholera. By N. Ward, M. D. - 289
Nursing Sore Mouth. By J. Yale Ware. - - - - - - 290
Aphtha. By J. Yale Ware. - 290

Domestic Summary.

Photophobia, resulting from exalted sensibility of the sensitive branch of the fifth pair going to the eye from irritation of the sensitive branch of the same nerve going to the teeth. By Dr. I. Hays. - - - - - - 291
Deaths from the Inhalation of Sulphuric Ether. By Dr. Paul F. Eve. - - - - - - - 293
Lupulin as an Anaphrodisiac. By Dr. Page. - - - - - - 293
New Method of Expelling Foreign Bodies from the Larynx. By Dr. Charles Hansford. - - 294
American Medical Association. - 294
Cholera. - - - - - - 294
List of Graduates of the University of Pennsylvania. - - - 296

THE
AMERICAN JOURNAL
OF THE MEDICAL SCIENCES
FOR JULY 1849.

ART. I.—*A brief Account of the Origin, Progress, Symptoms, Mortality, and Treatment of Pestilential Cholera, as it occurred in the Mississippi Valley, and especially in the city of Memphis.* By LEWIS SHANKS, M. D., of Memphis, Tenn.

THE uncertainty which still exists as to the origin and mode of propagation of pestilential cholera, its extensive prevalence, and the enormous fatality which has everywhere attended its progress, invest all the facts connected with its history with deep interest; for it is only by an accumulation of facts, and by their comparison, that we can hope to arrive at a knowledge of its causes and nature, and of the best means of staying its ravages. With the view of contributing our mite to this great work, we shall in the present article give a brief account of the disease as it occurred in Memphis, and generally in the Mississippi Valley. Our remarks upon it will be especially confined to an account,—

1*st.* Of the general state of the weather before and during its prevalence.

2*d.* Of its commencement in Memphis, and the sanatory measures adopted.

3*d.* Of the time and manner of its invasion of New Orleans, its extension along the principal rivers, the time and manner of its commencement and prevalence at Memphis, and the facts in reference to its cause and extension.

4*th.* Of the symptoms at the commencement and during its prevalence, as modified by the weather, &c.; the post-mortem appearances, and the mortality.

5*th.* Of the treatment.

1*st.* *State of the weather previous to the occurrence of cholera in Memphis.*—In the absence of any regular and daily register of the thermometrical and hygrometrical changes, the general and striking peculiarities only can be given.

About the 20th of last October the rainy season commenced here, and from that time until the 29th of December, with the exception of occasionally two or three fair days, it continued to be cloudy, and to rain frequently in very heavy and protracted showers; so that the streams in the country were generally unusually high, and the earth was kept saturated with water. During this long continuance of rain the temperature of the atmosphere was uncommonly warm for the season, and this was particularly so during the latter part of December, up to the time that cases of cholera became sufficiently numerous to induce the Board of Health to announce its existence here, to a limited extent, as an epidemic, especially among the flatboat population along the landing.

In connection with this account of the weather, it is proper to state, that about the middle of December, influenza, within a few days, affected a very large proportion of the population of Memphis, and extended rapidly over the country. Generally, the disease was mild. The catarrhal symptoms were preceded and accompanied by slight chilliness, aching in the head, back, and limbs; but in some cases more decidedly inflammatory symptoms were developed; evinced by rigors, with fever, pneumonia, pleuritis or bronchitis, thirst, white fur upon the tongue, &c. It was fatal only in a few cases of delicate persons.

On the 29th of December the weather cleared, and there was no rain until the 12th of January. This spell of dry weather was sufficiently cold to freeze the ground, and it continued, except a sleet on the night of the 8th of January, for fourteen days. We call attention particularly to this, on account of the influence which it seemed to exert over both the increase and the symptoms of the disease, as will be more particularly noticed hereafter.

2*d*. *Its commencement in Memphis, and the sanatory measures adopted.*—On the 20th of December, the steamboat Convoy, which runs in the Memphis and New Orleans trade, arrived here in four days' passage from New Orleans, with two or three cases among the hands on board, which were pronounced cholera by Dr. Ashbel Smith and other physicians who saw them. Two of these cases proved fatal. Several days previously to the arrival of the Convoy, other boats going up the river from New Orleans had reported cases and deaths on their passage, especially among the firemen and deck passengers.

This certain evidence of the existence of cholera, in New Orleans, created some alarm here, and preparatory to its expected visitation of Memphis, the Board of Health urged the importance of immediately cleaning the streets, alleys, back yards, &c.; and draining and filling up all low places, upon which any standing water remained, which was carried into effect by the city council.

Means were also adopted to enlighten the public as to the best prophylactic means to be adopted, and as to the course they should follow in case of an attack.

3*d*. *Time and manner of the invasion of the disease.*—Some facts as to the time at which cholera commenced in New Orleans, its progress there, &c., are interesting, for the purpose of showing the length of time required, after the first well-marked case, to develop the pestilence there, and to so infect persons on the boats as to transport the disease here.

These facts are furnished in an authoritative form, by Dr. Fenner, of New Orleans. (See the preceding number of this Journal, p. 541, *et seq.*)

Dr. Fenner states, that the ship Swanton, from Havre, arrived at New Orleans on the 11th of December, and landed at the public wharf in the second Municipality. On the morning of the 12th, a woman of the Swanton was carried to the Charity Hospital, in a complete state of collapse. She was reported to have been attacked the night before with violent purging, vomiting, and cramps. On the 13th, a man, who was a passenger on the same vessel, was taken to the hospital in a collapsed state. The same day, the books show, that three other cases of cholera were received into the hospital, from different parts of the city. These five cases all terminated fatally. From the 13th, the daily number of admissions rapidly increased. On the 22d, in the hospital, 22 deaths occurred, and in private practice 23. The Board of Health reported on the 23d, that 45 deaths had occurred the previous day, of cholera; and that it was prevailing as an epidemic. By the 28th it had reached its climax; the largest number of deaths, 92, occurred on that day. On the 6th of January, only 38 deaths occurred, and the Board of Health announced the cessation of the epidemic. From its commencement to the 20th of January, Dr. Fenner estimates the number of deaths in New Orleans at 1400.

I have already stated that on the 20th of December, the steamboat Convoy arrived at the Memphis wharf, with cases of cholera; and that several days previously to her arrival other boats, passing up the river, reported cases and deaths on their trip up to this point. Allowing four days for the trip up from New Orleans to Memphis, and that cases and deaths had occurred on boats passing this point on the 18th, the boats must have been infected, or the persons sickening and dying must have received the poison in New Orleans, on the 14th, two days after the first cases occurred.

Previous to the 22d of December, I had not seen among our citizens, any striking tendency to bowel affections, more than usual in such damp, rainy weather. On that day, at 2 P.M., I was called to see a boy 16 years old, who had been employed in huckstering fruit, &c., about town, and was in the habit of attending at the wharf, when boats landed, to sell to the passengers. He had been attending the landing, and was at the Convoy the day before, but did not go on board.

When I saw him, he was in a state of complete and hopeless collapse,—blue, cold, pulseless, shrunk tongue, and breath cold; eyes sunk and injected, and his voice much altered. He was attacked the night before, about ten o'clock, with purging, vomiting, and towards morning cramps; but had gone down stairs, into the back yard to the privy, until two hours before I saw him. A short time before this, he had discharged from his bowels about three-fourths of a pint of inodourous fluid resembling thin corn-meal gruel. About two o'clock that night he died. He had been labouring under a slight diarrhœa for several days before the attack.

Although nearly every boat, passing up at that time and afterwards, reported cases and deaths, no other case occurred here among the citizens until the 26th.

A man and a woman about 41 years of age, residing one hundred and fifty yards distant from each other, and a quarter of a mile from the steamboat landing, were attacked on flatboats: both were temperate persons, and comfortably situated on their boats. They were deceived by the insidious progress of the disease, and, for the want of timely and efficient treatment, passed into collapse and died—one on the 29th, and the other on the 30th. On the 30th, six deaths occurred at different places, in sight of each other: four among the flatboat population, and two persons who had arrived from New Orleans, a few days previously. By the first of January, a considerable number of cases, and several deaths, occurred at different points from one end of the landing to the other, under circumstances that rendered it impossible for the disease to have spread by actual contact, as the cases were too remote from each other; and most of the subjects of them had neither been on an infected boat, nor in immediate contact with a case of cholera. To better understand the impossibility of the disease spreading so rapidly among this river population, by communication from one to another, or from direct communication with the steamboats at the landing, it is necessary to be known that the principal steamboat landing is in front of the lower part of the city, and that the flatboat landing extends from the steamboat landing, along up the river, to the Navy Yard; and at this season of the year, when a large number of flatboats, laden with produce, stock, &c., from the upper country, accumulate here, they stop above the city and the Navy Yard, so as to extend the line of flatboats nearly two miles in front and above the town. At the time the cholera commenced, there was a larger number of flatboats at the landing than usual, stopping here on account of the dread of the cholera below. The population connected with them, and with a few produce houses near the river, was estimated at about one thousand. Between this population and the steamboat landing, there was but little communication; so that, but few, if any, of those who were attacked, could either have been aboard of infected steamboats from New Orleans, or in contact with cases of cholera. This is rendered the more certain from the fact, that by the 2d of January, cases and deaths had occurred on different boats, from one extremity of the landing to the other; and one or two died at the upper part of the landing, a mile above town, who never had been, either down to the lower landing, or in town.

Intervening between the town and the river, is a wide batture, which separates the population on boats from that of the town, except a few persons occupying houses near the river, three to six hundred yards from the town.

Whilst the disease had thus extended itself the whole length of this line of population on the river, I neither saw nor heard of a case in town, which had not certainly originated at the river, except the case of the boy already mentioned—who had been visiting the steamboat landing to sell fruit to the passengers—which occurred on the 21st, and a child two years old, that took sick on the night of the 30th, and died the next evening.

This latter child was remote from the landing, in town, and no inquiry was made to ascertain whether it had been carried to a nearer point of exposure, to where the disease was prevailing, or not; nevertheless, when I saw it, four hours before it died, it presented all the symptoms of complete collapse, to which state it had been speedily reduced by vomiting, and copious rice-water purging in the night.

I have been thus particular in giving the facts, as to the time and the localities of the occurrence of the first cases, because they go very far towards proving that few, if any, of cases that originated here, could possibly have been produced by actual contact with, or direct communication from, other cases brought from New Orleans.

The inference, however, may justly be made, that the infection or poison which produces cholera is carried from place to place by steamboats departing from an infected port, especially when cases of the disease exist upon them; and that the infection or poison is thrown off from such boats, or transmitted, to a limited extent through the atmosphere, so as to produce the disease in persons strongly predisposed to it.

As tending to render more convincing the evidence upon which this inference is based, it is proper to state, that the cases occurring all along the two miles of the Memphis landing, within a few days of each other, were bordering on the channel, along which the steamboats daily passed, and were, most probably, produced by the specific poison communicated from the steamboats, through the narrow space of damp atmosphere intervening between them; because, if they are attributed to an epidemic state of the atmosphere, or to local and malarious causes, it is exceedingly improbable that they would have been confined to this long line of immediate contiguity to the steamboat channel, without radiating sooner in other directions among the citizens in town. Besides, the inference made from the facts presented here, is strongly, if not conclusively, sustained by the additional fact, that since the commencement of cholera in New Orleans, on the 12th of December, up to the present time, more than two months, not a single instance has occurred, within my knowledge, from the most extended inquiry, of a case originating off from the borders of the rivers traversed by steamboats, in the whole extent of this great valley. But extending along the various navigable rivers from New Orleans, the disease has taken already an extensive range. Cases have not only been carried to, but have originated along Red River as high as Shreevesport—along the Mississippi, on the plantations along the coast, at most if not all the towns, and at most of the wood-yards and many plantations as high as St. Louis—along the Ohio river, at Louisville and Cincinnati, and along the Cumberland to Nashville, where it was (February 23d) prevailing with considerable fatality. This extended prevalence of cholera could not reasonably be supposed to confine itself so long and exclusively to the surface and the immediate borders of the navigated rivers, if any peculiar epidemic state of the atmosphere, extending so vast a distance, was capable of producing it without the aid of the specific poison disseminated through it, from a source of infection being brought contiguous to the various places where the disease has been developed. It is certainly a fact, that during more than two months of prevalence of cholera, almost throughout this great valley, the disease has not extended, by the origination of cases, beyond the immediate borders of the principal rivers. Within three or four days after the first cases occurred in New Orleans, all the boats leaving that port had cases among the crew or passengers, and thus the disease was speedily carried up all the rivers connected with New Orleans by steamboat communication. Not a single case, however, is known to have originated anywhere above New Orleans, on any of the rivers, before infected boats and persons sick or dead of cholera, were carried to the places where the disease was afterwards produced.

Soon after the arrival of infected boats from that port, cases began to be produced at the various points where they landed, or passed sufficiently near to communicate the infection, occurring soonest and in the greatest number at the points nearest to New Orleans, and those most exposed by direct communication with the boats from that port. Going north from New Orleans in mid-winter, if cold has the influence generally conceded to it in checking the disease, the production, virulence, and diffusion of the poison, as they ascended north, would be diminished, and the production and extension of the disease less in proportion as they advanced in a northern direction.

Now, so far this has all proved to be exactly true. Next to the city of New Orleans, the coast and the towns on the lower Mississippi have suffered most. Red River plantations and Shreevesport have suffered next most severely; then Memphis, Nashville, St. Louis, Louisville, and Cincinnati, in the succession given, have suffered in proportion to their relative southern latitude and extent of communication with New Orleans, and boats from that port.

As an example, out of many that might be given in proof of steamboats soon becoming infected and producing cholera far from the point where it was prevailing, and where they imbibed the infection, and far from any evidences of choleric atmosphere, the following is noted: Dr. H. started from Louisville about the first of January, on the steamboat Melodeon, to come to Memphis. The Melodeon ran in the New Orleans and Louisville trade, and was direct from the former port. At that time there were no cases of cholera in Louisville, except a few in the Marine Hospital, taken from the New Orleans boats. Dr. H. started from Louisville when there were no evidences of any choleric atmosphere or infection, except on the boats above Memphis. The evening before the boat arrived here he was attacked with cholera, and, by the time of its arrival here, was extremely ill; he, however, went on to New Orleans, and recovered. On his return, about the 20th of January, he reported these facts to me; and also that another gentleman from the upper country had been seized a few hours after him, and had died in ten hours after the first symptoms of the disease.

Although inclining strongly to accord with the reports of health committees, and the generally expressed opinions of physicians, throughout the world, that cholera is not contagious, or infectious, the careful observance of the facts connected with its production and prevalence in this widely extended valley, and a careful examination of the many facts furnished by the highest authority elsewhere, upon this subject, authorize the conclusion, that whilst it may in some countries seem to extend itself as an epidemic, in others, as recently in this valley, it has presented more the march of an infectious pestilence.

The term infection is used in its most commonly received sense, to mean a specific cause of disease, that is readily transmissible through the atmosphere in certain conditions, to a greater extent than the virus of the more strictly contagious diseases; but always producing the same specific disease, and generating or reproducing itself.

Having alluded to facts elsewhere, confirmatory of those furnished here on this point, I shall only cite one or two which have been recorded from observations made and reported on our own continent, without extending their accumulation from foreign sources. Dr. Dickson states, (*Am. Med. Journ.*, vol. xiv.) "that the brig Amelia left New York on the 19th of October 1832, for New Orleans.

"Previous to her departure, some of her passengers were affected, but in six days the cholera was developed, and in eight days, 24 died. At this time she stranded on Folly Island, far out seaward, and about twenty miles from Charleston. This isolated healthy island was inhabited by four negroes. The captain, passengers, and crew, took refuge in the buildings on the island.

"These, together with eighteen members of the Charleston Guard, and a boat's crew of wreckers, who came to their assistance, made about 150 persons. Of the persons thus thrown together, all being healthy except those from the Amelia, who were affected with cholera, 23 died. Twelve of the passengers, six wreckers, and three of the four negroes, the nurse, and one of the city guards. Dr. Hunt, the attending physician, and the other seventeen city guards, were all, except one, attacked with cholera."

This fact creates a strong presumption, that the disease was communicated by the sick crew and passengers of the Amelia, to the other persons on the island.

Since the commencement of cholera in New Orleans last December, cases have been reported among the emigrants, on their passage from thence to California, at Chagres and at Panama; and the last accounts from California state, that an emigrant who died of cholera was buried with a cloak about him. The natives exhumed the body for the purpose of getting the cloak, and six of them died of cholera.

Taking the facts as they have been developed, and now exist, in reference to the progress and propagation of cholera from New Orleans, almost the entire extent of the steamboat navigation of the principal rivers in the great valley; and duly considering its invariable confinement to the surface and immediate borders of these rivers, though it has extended over many degrees of latitude, and several degrees of longitude, from the point of its origin; and that not a single case has originated anywhere before the arrival of an infected boat;—we would ask, can these facts be reconciled at all with many of the theories, and opinions, as to its cause and mode of propagation?

If cholera be not infectious, and communicable in that way, could a specific agent be forced from the bowels of the earth by subterraneous commotion, to the extent of all these long rivers, in so short a time, affecting only those persons on their surface, or immediate borders? Could a deficiency of electricity exist to so great an extent on all these rivers, as to produce a rapidly fatal disease, whilst the people but half a mile, or less from them, enjoy good health? Could any peculiar epidemic constitution of the atmosphere, produced by meteorological, or subterraneous influences, or by animal or vegetable malaria from general warmth, dampness, or vicissitudes in the weather, alone,—in mid-winter, without any appreciable specific morbid cause operating upon, or transmitted through it, produce a disease so malignant and fatal, extending thousands of miles along steamboat navigation on rivers and their immediate borders, without extending half a mile from them?

The facts furnished by the propagation of cholera in this extensive valley, so far, seem to be irreconcilable with any of these theories.

In addition to these theories, which have had not only able advocates, but their day of favorable consideration, I shall allude to a few others. Late advancements in microscopic investigations, have established the fact in reference to some, and greatly increased the probability at least, that other specific diseases are produced by animalculi, or vegetable fungi, and the progress of investigation promises to throw great additional light on this subject. Their almost incalculable reproductiveness would favour the conclusion that they might be produced and reproduced almost to any extent, from a comparatively small source; and be carried and transmitted to a limited extent by the sick, their clothing, ships, boats, through the atmosphere, so, as not only rapidly to produce cases of cholera, but even to give it the appearance of an epidemic, and especially so in the summer, when open houses, and a greater evaporation from the sick, their evacuations, &c., would carry with the exhalations into the atmosphere, these invisible, but specific morbid productions, so as to extend the *materies morbi*, and its influence, with as much rapidity as cholera has ever spread.

Dr. Cowdell, who adopts the theory of vegetable fungi as the morbid cause of cholera, and its more rapid and widely extended transmission, than that of the strictly contagious diseases, states, as to the reproductiveness of the cause, upon the authority of Fries, that a single one of the *reticularia maxima* has produced 10,000,000 sporules, that they are light and float rapidly through the air. He also states that the aptitude of these fungi for the human body is established by the fact, that they are found in various secretions and excretions in different diseases—in the fluid of pyrosis, in the exudations of puerperal fever, and in dysentery—and that these vegetations exist in thrush.

The production and virulence of cholera in low, damp, filthy, confined, and crowded places, and its general appertainance to such situations, are favorable to these views of its cause.

Whatever may be the *materies morbi*, however it may be produced, all the facts attendant upon its present prevalence go to prove that, it is specific in its character and effects; and that it is governed by different laws from those which govern other wide-spreading epidemics, such as its frequent precursor or follower—influenza. For while one travels most rapidly, with the winds, and passes over hill and dale, affecting speedily the population of entire countries, the other, so far as its recent propagation demonstrates its mode of extension, goes only where it is carried by tangible objects, with which it is transported, and is reproduced by its own subjects—affecting, in its course, such persons only as are within a limited distance of its influence; and that distance seems to be intermediate, between that of the strictly contagious and the epidemic diseases.

Another remark may warrantably be made in reference to the cause of cholera: that, like other specific morbid causes of disease, it has, in addition to its many other incidental effects, one universal tendency to affect the bowels in a peculiar way. The virus of small-pox, measles, chicken-pox, scarlatina, &c., tend universally to affect the skin, and to pass out of the body, each in its particular way, through that tissue: so, other specific diseases affect, in their peculiar way, other organs and tissues.

This analogy between cholera and other diseases, particularly those which are contagious and infectious, and which transmit themselves in that way, is strongly corroborative of the specific, reproductive, and infectious nature of the cholera virus. It indicates another likeness to the specific diseases alluded to, which will be more particularly noticed in treating of its pathology, *that, as in them*, the poison which has impressed its morbific influence upon the blood, as well as on the nervous system, tends universally to be thrown off through a particular tissue and outlet of the body.

These analogies and resemblances to the specific and infectious class of diseases, seem to entitle it more to be considered as a *pestilence* than an epidemic.

4*th*. *Symptoms and pathology of cholera.*—I shall briefly give the prominent symptoms presented in the different stages of the disease at its commencement here, and such modifications as occurred during its prevalence, from the influence of the weather and other causes, the post-mortem appearances, and the pathology upon which its treatment was based in the different forms which it presented in different cases.

The first cases occurred among the flatboat population, who are subject to diarrhœa from the effects of the Mississippi water, especially those persons coming from the Ohio valley. They were affected with diarrhœa from one to several days; and some of them, who had had slight looseness of the bowels for several weeks, dated the commencement of their attack one to two days previously to the occurrence of the spasms, as at that time they had an increased looseness of the bowels, the discharges became more frequent and copious, and more liquid and serous in appearance, without much uneasiness or pain,—each discharge flowing off easily, and followed for a short time with relief of the uneasiness of the bowels which preceded it. So insidious was the outset and first stage of the attack, in most cases, that patients could not be induced to believe by their friends or their physicians, that it was anything more than the ordinary river diarrhœa, such as they had frequently gotten well of before without medicine, and that they were really in extreme danger of a fatal development of cholera.

This exemption from the feeling of being dangerously sick, or of there being any cause of alarm from the precursory diarrhœa, was such as to induce many to refuse to take medicine or consult a physician, until far advanced into the second stage of the disease, or even verging upon collapse—when the pain from cramps, thirst, sick stomach, and vomiting, became prominent and distressing. This remarkable manifestation of indifference to, and insensibility of danger, seems diagnostic of pestilential cholera.

I have seen cases in which the stools had been frequent and copious from one to two days, and had become thin as turbid Mississippi water—where the eyes were sunken, hollow, and injected; the extremities, face, and general exterior, shrunk, cool, or cold and bluish; the pulse feeble, or almost imperceptible; the voice hoarse and weak, and cramps commencing in the extremities—and still the patients would insist that there was not much the matter with them, and if let alone they would soon get well without medicine. On visiting one case of this kind, I found the patient sitting up in a damp, confined cabin on a flatboat, blue, shrunk, and perfectly pulseless at the wrists, complaining only of cramps, and vomiting of the water, which his intense thirst induced him to drink freely. This man's system had been gradually, but completely, drained by the easy but copious serous discharges from his bowels; and though he then believed himself in no danger, in a few hours he was a corpse.

The marked increase of a previous diarrhœa, or the commencement of the precursory diarrhœa, generally took place in the night, or early in the morning. The precursory or first stage generally continued, the stools becoming more and more copious and liquid, until the following night or morning; or, if the attack was less violent, until the second night; when the second stage was ushered in by vomiting and cramps, commencing in the extremities, generally the feet and legs first. The vomitings at first consisted of undigested food, but soon became copious and watery, and greater in quantity than the amount drank. The thirst, impairment of respiration and its functions, general enervation of the system, waning of the action of the heart and force of the circulation, suppression of the secretion of urine, &c., followed, in these cases, in proportion to the time and the quantity of the discharge from the bowels.

The second stage, in a longer or shorter time, from three to fifteen hours, dependent mainly on the quantity of the *liquor sanguinis* drained from the circulation, and the rapidity with which this took place, ran into the third or collapsed stage, which was marked by an almost or quite extinct pulse at the wrist; by a cold, blue, shrunken, shrivelled, and sodden state of the general exterior, particularly the extremities and face; the features sharpened and the countenance much altered; the voice changed to a hoarse whisper; the tongue pale or bluish, cool or cold, generally broad and moist, with a thin white fur extending over it; the breath cool, or cold; thirst insatiable; the eyes hollow and injected, and, during intervals of quietude, only partially closed, generally showing the adnata, the balls being turned upwards; the secretion of urine entirely suspended; the absorption from the stomach and bowels suspended; the respiration generally slow, though sometimes hurried, but always oppressed and confined; the functions of respiration, in the oxygenation, and the change of the venous to arterial blood, and the consequent development of caloric much impaired; the mind rational and clear, but slow and feeble in its actions.

After passing fully into this collapsed state, the purging, vomiting, and cramps gradually diminished, and in some cases almost entirely ceased for several hours before death took place. Death occurred, in cases where the spasms persisted, after the circulation was much impaired, suddenly, from a spasmodic affection of the heart and diaphragm arresting vital action; in others, and most commonly, from enervation of the whole system, resulting in insensibility and death. This collapsed state continued from a few hours to one or two days before it terminated in death.

I have already stated that the first cases of cholera occurred at the close of a long continued spell of warm, rainy weather. On the 29th of December it cleared off, and from that time the weather continued dry, becoming so cold as to freeze pretty hard, during a continuance of fourteen days. Eight or ten days after the commencement of this dry spell of weather, when it was coldest, such cases of cholera as I have described were suspended for several days. During these few days, the attacks were ushered in with uneasiness of the stomach and bowels, attended with a disposition to stool, the dejections being small; or with sickness and pain, or cramp, in the stomach, and vomiting of undigested food, without purging; with giddiness or pain in the head, soon followed by a feeling of great prostration; the pulse slow and feeble; the surface and extremities cool; and cramp in the bowels, and sometimes in the extremities. These attacks were attended with so much suffering, that immediate medical aid was sought, and none of them terminated fatally, except one. The subject of this case, which occurred on the 10th of January, was a negro man of intemperate habits. When reaction began to take place, about nine hours after the attack, he complained of numbness in the entire right side, without any pain, however, in the head, but intense pain in the bowels. As reaction increased, he became more and more stupid and insensible, and died apoplectic, about seventeen hours after the attack.

On the 12th, it had become warm and rained heavily, and the cloudy and rainy weather continued about a week. Soon after this rainy spell commenced, the cases assumed more of the previous and fatal character, with the profuse watery purging, &c. Within a few days after the commencement of the rain, several of the most sudden deaths occurred, the attacks commencing without the precursory diarrhœa;—purging, vomiting, cramps, and collapse ensuing so rapidly as to prove fatal in eight to twelve hours after the attack.

Flatulence, indigestion, aching, or pain in the stomach and bowels, with and without diarrhœa, giddiness of the head, slight spasmodic twitchings of the muscles in various parts of the body, &c., were frequent during the prevalence of cholera. In some degree, perhaps, every person felt the influence of the choleraic poison.

In most of the cases when the vomiting, purging, and cramps were relieved, and reaction perfectly restored, followed by perspiration, and a restoration of biliary and urinary secretions, recovery invariably took place speedily, and without consecutive fever.

But if reaction was incomplete, and a healthy perspiration and the other secretions were not restored, the appearances of amendment were generally delusive, and resulted in a typhoid form of consecutive fever, marked by a brick-red or bluish-red colour of the skin; dry and red tongue; thirst; indifference, gradually increasing to stupor; with slow pulse, and slow, heavy respiration, and finally coma and death. In such cases, neither the secretion of urine, nor a proper secretion of bile was restored, and they terminated fatally after this imperfect reaction, in from three to seven days.

In other cases, however, in which the reaction took place, often from a less hopeless condition, under the use of stimulants exclusively, such extensive gastro-enteritic inflammation was produced, as to modify the progress of the case; and though both biliary and urinary secretion, and also perspiration were produced by proper means, still the case became protracted, presenting most of the symptoms of the more lingering cases of typhoid fever. These cases, though but few occurred, generally proved fatal.

I treated two cases at the same time, in the same house, of middle-aged men of intemperate habits—one a second attack, in which reaction was imperfectly obtained from a collapsed state,—the pulse feeble and small, the extremities shrunk, cold, shrivelled, &c., and severe spasms with the congee stools. The pulse gradually rallied, becoming slow, and tolerably full, but soft; the stomach retained drinks; the skin perspirable and warm; the complexion restored, except the brickish-red cast; the discharges from the bowels became consistent, but of a grass-green, gelatinous, or pultaceous character. All the symptoms improved for several days, except the entire suspension of the secretion of urine. The fourth day of this condition, the pulse and respiration became slower, the tendency to stupor increased, and finally the patients died comatose on the sixth day after the commencement of reaction, without any secretion of urine.

The suspension of urine occasionally continued two to four days, in persons who had not been so completely drained by the copious rice-water discharges as to produce complete collapse, without either seriously affecting the brain or interfering with recovery. I saw a gentleman of good constitution and habits, who had been treated in the second stage of the disease, without having had very copious purging, upon Hawthorn's sweating plan. He had passed more than a hundred hours without any secretion of urine, and without any action upon his bowels, or any evidence of biliary secretion. Some thirst, fever, headache, and considerable prostration existed. By a mild mercurial alterative course, the biliary and urinary secretions were restored in six or eight hours, and he gradually recovered.

In the different cases, stages, and grades of the disease, the discharges were various. The cases first described, in which the diarrhœa gradually increased until the copious evacuations drained the system of the serous portion of the blood, presented more unequivocally the *congee* or rice-water discharges. In some instances, in the commencement of the collapsed stage, they were as clear and inodourous as pure water; but, after standing a short time, they exhibited a loosely floating, filiform, flocculent matter. In other cases, especially when the disease supervened upon a chronic diarrhœa, the stools were offensive, and in appearance and consistence like dirty soap-suds, slightly frothy; and upon settling presented the appearance of thin gruel made of yellowish cornmeal, the upper part becoming clear and the turbid particles settling down in the vessel. In one case, in the collapsed stage, the stools were offensive, and resembled chocolate made with milk. In another case, after a sudden and violent attack, the discharges were suspended, by the remedies used, some twelve hours; and, when they returned, they consisted of copious bloody serum, which, upon standing, deposited loose coagula of gelatinous matter.

The ejections from the stomach were first undigested food, afterwards mainly the fluids drank. No complaint was made of any prominent taste in the ejections from the stomach, nor was bile ever either vomited or passed in any case, in the uninterrupted course of the disease. In every stage of the disease previous to the consecutive fever, except in the two cases of collapse which I have mentioned, when bilious discharges from the bowels were obtained recovery speedily and certainly took place. In those two cases, although the discharges were dark-green and pultaceous, it is doubtful whether they were bilious, or were from the liver at all; and whether they should be set down as an exception to the rule. I have occasionally seen such stools, in bad cases of congestive fever, in which calomel had been given freely; and I have been satisfied that they were made up of morbid acid secretions from the bowels, produced by the calomel, and coloured by it, and that there was no biliary secretion at the time. They have generally, in congestive fever, been unaccompanied with any improvement in the cases; and have most commonly indicated a fatal result.

Post-mortem appearances.—It is needless to occupy much space in the account of these, as they were similar to those generally found elsewhere. The shrunken, blue, or marbled exterior; the hollow eyes deeply sunk in the sockets; the congested and brownish-red aspect of the interior; the dark viscid, but uncoagulated blood accumulated in the cavities of the heart and large vessels, particularly the right side of the heart, the pulmonary artery, and the vena cava; the contracted state of the large bowels, their general surface lined with mucus, or a starchy matter; the contracted and empty state of the urinary bladder; the gall bladder filled with a dark-coloured viscid bile, the liver showing no immediate change from the disease, except engorgement of its large vessels, with the dark and viscid blood; and all the common appearances described by the best authorities elsewhere, as the result of their autopsies, were found here. The case particularly mentioned of a negro man, who died apoplectic, presented, in addition to the appearances already mentioned, great congestion of the vessels of the scalp, fulness of all the sinuses of the brain, and an effusion of several ounces of dark viscid, uncoagulated blood, between the dura mater and arachnoid membrane, on the upper and back part of the left side of the cerebellum; also a small effusion of serum in the ventricles, and considerable under the base of the brain and the spinal canal. The section of the cerebellum presented a remarkable number of black spots, showing altogether a very great degree of general congestion and effusion in the brain; and accounting fully for the numbness of the right side, which commenced with the reaction, and also for the coma and death.

The sensible character of the blood is peculiar in cholera. No discrepancy exists among writers, except that some speak of coagula in the cavities of the heart and large vessels, while others describe it as remaining, whenever accumulated in an uncoagulated state, dark, thick, viscid, &c., resembling, somewhat, molasses in its consistence; and also, when drawn from the body, standing without coagulating, or separating into serum and crassamentum, as in health.

The autopsies and observations made here, were confirmatory of the latter condition of the blood.

Mortality.—From the commencement of cholera here, on the 29th of December, in six weeks, as near as could be ascertained, in the city and suburbs, about one hundred died—nearly all in private practice, as the hospital is too remote for the accommodation of cholera cases. The cold, dry weather, which occurred soon after the commencement of the disease, doubtless lessened its propagation and fatality. Up to the present time, March 10th, sporadic cases continue to occur, and occasional deaths.

This mortality took place in a population of ten to twelve thousand persons, and chiefly among negroes, and those white people, who, from their condition, ignorance, or indifference, either had not the means—did not know—or disregarded the plain directions furnished by the Board of Health for the prevention and for the cure of the precursory stage of the disease.

The proportion of deaths to the number of cases could not be ascertained, as no reports were made of the latter.

From my own observations, not only in my own cases, but also in those attended by other physicians, which were as much extended as possible, for the purpose of seeing the disease in all its stages, grades, and different aspects, embracing about forty of the cases which terminated fatally, and a proportional number of those cured, there was but little success in curing the disease after perfect collapse, and cessation of the pulse at the wrist, though all the various means proposed for this condition were frequently and fully tried. I have seen myself but one recovery from pulseless collapse.

In the precursory stage of the disease, numbers cured themselves, and the members of their families who were attacked, by the prompt use of the remedies directed to be used by the Board of Health; and under personal medical attendance they were nearly all cured.

In the second stage of the disease, the success was generally gratifying, particularly if the necessary remedies were properly used before the system was too much drained by the rice-water discharges, and the waning pulse and shrunken features denoted the near approach of collapse.

5*th.* *Treatment.*—On the treatment of cholera so much has been written, and is accessible to every medical reader, that more than a brief outline of the plan of treatment adopted, and considered most successful here, is unnecessary.

1*st.* *Precursory stage.*—This stage in its commencement was, doubtless, arrested and cured in many cases by various means—such as brandy, capsicum, laudanum, peppermint, camphor, &c., separately and combined; but after it was fully established, though the use of these means often suspended for a time the purging, it most commonly returned in a more aggravated form and required other remedies in conjunction with them, to restore and correct the secretions and make the cure permanent. For this purpose, mercurials in moderate quantity, if not indispensable, were most efficient. In the crowd of business, for convenience and dispatch, finding it answer the indications well, I used a pill in this stage made of calomel 3 to 4 grains, camphor 1½ to 2 grains, opium 1 grain, oil of capsicum half a drop, or capsicum 1 grain. These pills to be taken from one to four for the first dose, according to the urgency of the purging, and from one to two to be repeated every hour or two, until the uneasiness or pain in the bowels and diarrhœa are relieved; their effects to be aided by a hot mustard foot-bath, close confinement to the horizontal position in bed, the use of warm, gently stimulating drinks, as sage, balm, ginger, or green tea, or toast, or rice-water, with bicarbonate of soda, and also by hot applications to the feet, and a mush poultice, rendered stimulating by the addition of pepper or mustard applied over the stomach and abdomen. After the purging was arrested, and perspiration restored by these means, if the bowels remained constipated more than twenty-four hours, they were moved by a teaspoonful of turpentine, combined with one to two tablespoonfuls of castor oil, which generally brought off bilious stools. During several days the diet was restricted to gruel, rice, tea and crackers, chicken water, &c., which generally established the cure.

2*d.* *Second stage.*—Called on to institute treatment in the second stage, when the purging of thin muddy, or rice-water discharges, with vomiting and cramps superadded, indicated the urgency of prompt and efficient relief to prevent the pending and fatal collapse, I required a strict observance of the horizontal position in bed, as free ventilation as possible, to supply fresh air for respiration, and gave, instead of pills, which were too slow in dissolving in the stomach, for this urgent condition, the following compound powder:—calomel, camphor, and capsicum, each, equal quantities, and opium 1 grain to every 20 grains of the compound, all to be well pulverized and rubbed together. Of this from 10 to 30 grains were given, according to the urgency of the symptoms, at a dose, mixed with from a teaspoonful to a dessertspoonful of laudanum when necessary, and washed down with a small quantity of cold water; and all drinks were prohibited until its impression was made on the stomach and general system. If vomited up, the dose to be repeated, and if the purging and cramps were not relieved, the dose to be repeated every half hour or hour, in such quantities, both of the powder and laudanum, as seemed necessary to control the symptoms. These remedies were aided by the *hot* mustard foot-bath, hot applications to the feet and back, a large blistering plaster applied over the stomach, &c. As soon as these means controlled the irritability of the stomach, warm drinks, toddy, toast water or teas, were allowed ad libitum. But while the stomach continues irritable, drinks of all kinds are almost immediately vomited up, and the thirst and vomiting are both sooner relieved when drinks are prohibited, and small lumps of ice only are allowed.

The compound powder and the laudanum were given in quantities proportioned to the age, constitution, and ability of the patient to bear them, and the emergency of the case. When the serous discharges from the bowels were copious, though the number of stools may not have been numerous, with a tendency to speedy collapse, especially when accompanied with violent cramps, a large dose both of the capsicum powder, and in some cases 20 to 30 grains of calomel additional, and the laudanum were given, repeated with or without the additional calomel at short intervals, if necessary to arrest the symptoms. At this critical juncture, when the physician is often first called, the life of the patient depends upon a correct judgment being formed of the *dose* which the patient can bear with safety; and the *dose* necessary should be given at once, and if it does not produce the effect desired in from three quarters to an hour, it must be repeated until the object desired is attained. The propriety and necessity of this prompt and bold practice when the treatment is commenced under these circumstances, are obvious—for one more stool—the delay or loss by small and inefficient *doses* of one hour, may bring about fatal collapse. In addition to the other means, an enema of a gill of starch and a drachm or two of laudanum, or, what was more efficient and better retained, one to two drachms of laudanum with one drachm of spirit of camphor, ether, and aromatic spirit of ammonia, or essence of peppermint, each, combined with the starch, is a valuable auxiliary, both in arresting the discharges and rousing up and sustaining the nervous energies of the system.

These means being successful in arresting the symptoms, and producing reaction, perspiration, and healthy secretions and excretions, the bowels were generally moved in due time, and the discharges were bilious; but if the bowels continued locked up beyond twenty-four or thirty-six hours, castor oil and turpentine were administered, to open them. These results being produced, mild diluent, and, when necessary, gently stimulating drinks, and abstemious diet, generally perfected the case in a few days.

3*d. Collapsed stage.*—In the collapsed stage the same course was pursued, with the addition of twenty to forty grains of calomel to each dose of the compound powder. The additional large doses of calomel were given, not so much with a view to its direct effect in producing reaction, as to its well-established effects in allaying irritability of the stomach, arresting watery discharges from the bowels, and restoring secretion and excretion when reaction was produced by other means, and thus preventing consecutive fever. By the use of calomel in this way, when its wonted effect upon the secretions was produced, consecutive fever was invariably prevented, as the result of either the second or third stage of the disease; and the only troublesome secondary symptom to the patient, which occasionally occurred, was ptyalism. Indeed, this specific effect of mercury, in any given ratio of doses and time, seemed more liable speedily to be produced in cholera when full reaction took place, than in any other form of acute disease.

In a case of speedy recovery in a man about twenty-five years old, from a state of pulseless and apparently hopeless collapse, attended with violent cramps, I gave, as a first dose, about twenty-five grains of the compound capsicum powder, with thirty grains additional of calomel, mixed in a large tablespoonful of laudanum, washed down with a glass of brandy. In a few minutes it was vomited, by a spasmodic action, far across the room. The same dose was repeated, and washed down by a swallow of cold water. The powder and laudanum, in the same quantity, were twice more repeated in the space of an hour and a half, and no drinks allowed until the stomach was settled, and partial reaction indicated absorption, when diluent drinks, with a moderate quantity of brandy, were given freely. In addition to the other means already mentioned in this and many other cases, a prompt and important effect was produced by woollen cloths wrung out of nearly boiling *hot* water, and applied to the stomach, spine, and extremities. After the three doses, laudanum alone was given, in teaspoonful doses, at intervals of two to four hours, until the cramps were relieved. In eighteen hours, this man took from an ounce and a half to two ounces of laudanum. The next day he was much better, though he had slept but little, and evinced no decided effect from the laudanum, except itching of his nose and of the surface generally. The following day he was well enough to sit up, and recovered speedily, with but a slight affection of the gums from the calomel.

So large an amount of opiate was not given in any other case. The result, however, proved that, though it was retained in the stomach, and absorption was re-established in a few hours, still the feeble state of the circulation, and, for a time, the want of supply of the healthy and necessary amount of arterialized blood in the brain, prevented the ordinary effects of the opiate from being produced on the brain and nervous system.

Being fully convinced, from many years of careful observation, of the importance and necessity of the free use of opiates and calomel in congestive fever, of the continued form,—from the pathological likeness of cholera, the same practice to some extent was adopted.

In cases of congestive fever, coming on as they frequently did here, eight or ten years since, with lassitude, slight chilliness, sick stomach, vomiting, prostration, &c.: vomiting and thirst increasing in the same ratio with each other; the pulse waning; the surface and extremities becoming cold, with increasing complaint of oppression and internal heat;—though in some few cases this complaint of heat was absent, and the tongue and breath were cool;—the pulse gradually diminishing down to a thread; the surface wet with cold, clammy perspiration; the skin shrivelled and sodden, as in cholera, but never so blue and marbled; the mind generally clear; but during the development of this category of symptoms, which required from three to five days to arrive at their acme, without any evidence of paroxysms, except an increase of oppression, frequency and feebleness of the pulse in the evenings, there were almost invariably great torpor and obstinate constipation of the bowels.

In these cases, opiates were tolerated and required in large doses; and my practice has been to administer them in combination with calomel, so as to give ten to twenty grains of the latter three or four times a day, with as much of the former as was necessary to relieve the concentration of nervous irritation upon the stomach, and to sustain the innervation of the brain and general system, until the action of the nervous and vascular systems were equalized by the influence of the opiates, and other appropriate means, and permanent healthy action secured by the general alterative and stimulating effects of the mercury upon the secretory and excretory organs.

This practice has been so uniformly successful in the condition of the system described, that I have seen no reason to change it for any other; though to make it so, in extreme cases, an amount of opiates equal to twenty grains of the gum in twenty-four hours might be required.

In cases of extreme irritability of the stomach in congestive fever, when the internal use of opiates failed to control it, and the general restlessness, after blistering the precordial region, the external application of morphia acted promptly and efficiently. This is more the case in cholora, and is a means of more value, when there are great depression and restlessness, and the stomach continues to be irritable, and no absorption is taking place from the stomach and bowels, than almost any other.

In the collapsed state of congestive fever, ice rubbed over the extremities, and the parts to which it is applied wiped dry, and well rubbed, and this followed by external heat, to be repeated every half hour or every hour, is a valuable means of restoring excitability and producing general warmth and reaction. This remedy used in cholera, when the system was not too much drained, and the blood rendered too thick to be invited back into the superficial capillaries, is decidedly valuable. But in the collapsed stage, when the blood has retired from the extremities and surface, it has failed to do more than temporarily improve the colour of the skin, and revive for a transient space of time the slight evidences of circulation that still existed. Like all other means in that condition, generally it fails in producing any permanent benefit.

No other disease, except sporadic cholera morbus, presents so many resemblances to epidemic cholera, as this continued form of congestive fever, in its symptoms, pathology, and treatment; though in it the profuse purging and cramps characteristic of cholera are wanting, and indeed in most cases the bowels are torpid; yet the general likeness is often striking, and, compared with cases described by Mr. Thorn and others, on the Ganges, where cholera collapse and death sometimes occur without purging, the resemblance is still greater.

Now this form of congestive fever is clearly the effect of malarial influences, and it is peculiar to low, damp, and malarious regions. The specific virus of cholera tends universally to affect the bowels and produce watery passages and cramps, and thus to constitute striking diagnostic symptoms between it and the most malignant forms of malarial fever. There seems to be no good reason, however, to *disbelieve* that the *cholera virus* and *malaria* may *co-exist* and *conjointly* act upon the system; and indeed, the fact that the cases of cholera which result speedily in collapse, without any purging, thus resembling pernicious fever, are only reported by physicians who have witnessed the disease in highly malarious and hot regions, such as the Delta of the Ganges, strongly corroborates their *conjoint* effects upon the system, and the occasional *predominance* of the malarial influence, in the production of such cases.

The ataxic cases which occurred here during the cold dry weather, were attended with pain in the head, stomach, and bowels, and prostration, without much, and in some cases without any purging; the pulse slow, 40 to 60, and soft; the surface cool, and the extremities cold and cramped.

Opiates in these cases, and especially when the cephlalagia was severe, could only be used with great caution. The abstraction of blood in this condition, and in this form of the disease only, seemed indicated and useful to develop reaction, and aid in equalizing the circulation and restoring healthy secretion.

4th. Consecutive stage.—When the plan of treatment I have given was adopted and properly carried out, in the previous, or three stages proper to cholera, consecutive fever rarely occurred; but, treated exclusively with anodynes, astringents, and stimulants, the recoveries were more apt to be slow, and attended with want of proper secretion and with gastro-enteritic inflammation, presenting a more or less protracted case of a typhoid form of fever. The treatment of this condition requires the use of alteratives, diluents, diaphoretics, &c.; a careful attention to the condition of the brain, to prevent a determination of the disease to that organ.

The importance and effect of a few of the prominent remedies in the treatment of cholera, deserves a passing notice.

Opium and Calomel.—Much importance has been attached to the free use of opium and calomel, especially in the second and third stages of cholera. While, in the precursory stage, they are important to moderate and arrest the purging, and at the same time to correct the morbid secretions, in the second and third stages the life of the patient depends upon the attainment of these objects in the shortest possible time.

To effect these objects, both observation and analogy prove that no other remedies are so efficient and certain, as opium and calomel. The want of ordinary susceptibility of the nervous system to the impression of remedies; the suspension of absorption from the stomach and bowels; the regurgitation of the chyle, and the rapid pouring into the stomach and bowels of the *liquor sanguinis* from the general system, carrying out speedily all the remedies given either by vomiting or purging, and by this current of determination to the bowels preventing their absorption and diffusion through the system; all show the indispensable necessity of large doses to secure the desired object.

The opiates—and *laudanum*, or *morphia*, from their more prompt action, are best—must be given in large doses, sufficient to arrest the discharges. Other effects, not much less important in this condition, are more certainly produced by *it* than any other remedy. It sustains the nervous energies and the action of the heart; it relieves local irritation and cramps, and equalizes innervation, and thus helps the system to rally under the depressing influence of the morbid poison. For the additional effort, of safely eliminating the poison from the system, and correcting the morbid secretions produced by its influence, the great weight of medical authority, and my own experience, are in favor of calomel above all other remedies. It must, however, successfully to meet the emergency, be given in large doses, and immediately with the laudanum, so that no time may be lost in securing its alterative action. To the inexperienced, the use of calomel in large doses, when there is copious serous purging, might seem a paradox; but who that has almost invariably found a full dose of calomel, uncombined with opium, arrest the frequent watery discharges in ordinary diarrhœa, and gradually give them healthy consistence, could doubt the propriety and importance of its use in this condition, with a view to its alterative effects?

Large doses of opiates are warranted, and proved to be safe in this condition of the system, not only by ample experience, but from analogy. If the case terminates fatally, nothing is certainly determined as to the relative effects of the remedies used, and the disease upon the system; because, when it is exhausted by the discharges, the general enervation results in insensibility and death, without the use of opiates; this insensibility and stupor which immediately precedes death may be attributed incorrectly to the effects of the opiates.

But when a violent case is treated by the free use of opiates, such as the case of complete collapse reported, then and then only can the favourable, or unfavourable effects of this remedy be fairly and fully determined, by the clear manifestation of its effects.

In cases of feeble action of the heart, and deficient supply of blood to the brain, either from hemorrhage or from other causes, large doses of opiates are not only safely tolerated, but required to sustain the system, as in uterine hemorrhage, mania-à-potu, congestive fever, &c.

For the purpose of stimulating and constringing the exhausted surface of the stomach and bowels, and also rousing up and sustaining the depressed nervous energies of the system, and producing reaction, capsicum, camphor, spirit of ammonia, brandy, and various other stimulants and aromatics are valuable auxiliaries.

Another very important requisite deserves to be more particularly noticed in the successful treatment of cholera, after the system is at all exhausted by the discharges of its white blood; absolute confinement to the *horizontal* position in bed.

In no condition except after profuse hemorrhage, is the effect of the erect posture so immediately manifest in producing faintness, sick stomach, enfeebled pulse, &c., as in cholera. In a state of partial reaction, and a favourable and promising change in the symptoms, after great exhaustion from profuse discharges, I have seen all undone, and the fatal collapse reproduced by the patient's assuming the erect posture on getting out of bed.

Prophylaxy.—Enough has already been said about the peculiar habitudes of the cholera virus; the favourite localities and situations for its development and propagation, in places which are low, damp, confined, and filthy. Obviating by every means these unhealthy conditions of the atmosphere, or removal from such localities, are the important measures necessary to lessen or to avoid its virulent influence.

The more immediate means of protection against an attack of the disease, consist in being surrounded as far as possible by all the comforts of life—such as dry, airy houses, warm clothing, the avoidance of exposure or fatigue, nourishing and digestible food, taken at regular intervals, and regular hours of rest and exercise, or attention to business.

When cholera is prevailing as an epidemic, those persons who enjoy these advantages, and avail themselves strictly of their observance, are but little liable to severe or fatal attacks. In addition to these precautionary and protective measures, the introduction of cases of the disease into crowded houses, where proper ventilation and cleanliness cannot be secured, as far as possible should be avoided; and, when cases occur under such circumstances, if practicable, they should be removed.

Soon after the commencement of cholera here, a case was taken from the flatboat landing into a filthy and crowded house. After a severe and protracted illness he recovered. But, during his illness, other cases occurred in the house, and the disease progressed among the inmates, consisting of several families, until twenty-seven out of thirty persons were affected with it, and several relapses occurred. Finally, nearly all were removed from the house, when they speedily recovered. At the time this large proportion of cases occurred, out of whom six died, excepting in two adjoining houses, there were no other cases in the vicinity, although it was near the centre of the town.

Proper attention to these means will secure, in a great degree, immunity from the disease; whence it is that the chief fatality from cholera occurs among that portion of the population who either cannot or will not attend to their observance.

When, however, attacks do occur, it is a matter of the greatest importance to attend promptly to the first symptoms. By immediately and properly treating the first symptoms, except now and then a case occurring under the most unfavourable circumstances, none should prove fatal. There is no mortal disease in which the healing art presents so certainly the life-preserving balm as in cholera, if early and properly used. But so insidious and rapid is the progress of the disease, that many fall victims to it from not knowing or feeling the importance of its early treatment.

Philanthropy, and every proper consideration connected with the usefulness of the profession, require that, in reference to this disease especially, all proper means should be used to enlighten the people, both as to the proper and best prophylactic means to be observed, and also the importance of the early use of these remedies.

MEMPHIS, 1849.

Art. II.—*Extracts from the Records of the Boston Society for Medical Improvement.* By Samuel Parkman, M. D., Secretary.

April 9th. Cerebro-spinal Meningitis.—Dr. Joseph Sargent, of Worcester, read the following cases of this disease, epidemic in the town of Sutton.

The following are memoranda of an epidemic of cerebro-spinal meningitis in the towns of Millbury and Sutton, in March last. They are collected mostly from medical gentlemen in whose practice the disease occurred. They do not reach the accuracy of recorded bedside observations, but were related only memoriter. They come nearer the truth, however, for being observations of a disease that is rare, and which attracted a good deal of attention and remark.

Case I.—E. L., aged 55, was a scythe-maker in Millbury, and occasionally an auctioneer: a large, healthy man of temperate habits, and in good flesh. The invasion of the disease was on Saturday, the 26*th of March,* and not after any unusual work or disturbance.

March 25*th.* He had worked at his trade all day, and served in the evening as an auctioneer. He had slept well that night; and the morning of *the* 26*th,* after taking a light breakfast, as usual, at 7 A. M., had gone to his work, from which he returned at 8 o'clock, complaining of "aching of the bones." He was up and down during the forenoon, talking as usual, and without any dulness, though with some headache. Took a cup of tea for his dinner. In the afternoon his headache became so severe, that he called for an application of spirits of camphor. Took a cup of tea with his family at evening, and had a comfortable, quiet night: not talking, groaning, or snoring in his sleep. Had had no nausea, and the bowels were open. Sunday morning, *the* 27*th,* he rose at 7 o'clock, complaining of very severe headache. Ate no breakfast; had a chill soon after he was up; and, now, the headache became so severe, that he said he had never known what headache was before. Dr. Corlew, of Millbury, was called in at 10½ A. M. He reports that he found him lying quietly on his left side in bed, with the knees bent, and respiration not labored nor hurried. His pulse was 85, apparently full, but easily compressed. Skin universally flushed, hot, dry; greatest heat about head. Pupils equal, moderately dilated, not contracting to light. The patient seemed to be only partially conscious. Being asked to put out his tongue, would protrude it and not retract. Being asked if his head ached, said "a little;" did not seem to be conscious of any great pain; mistook morning for evening, and repeated the mistake when corrected. His tongue was dry, glossy, very red. Dr. Corlew advised frictions with strong mustard water; sinapisms to calves of legs; cold to head; and pills containing blue pill gr. x; comp. extract of colocynth, gr. xv; rhubarb. gr. xv.

Dr. Corlew saw him again at 1 P. M. The purgative had moved the bowels twice, smartly, producing dark fluid evacuations. His skin was now universally pale and cold, especially on extremities. He was lying on his back, quietly, with the limbs extended, the eyes closed, the pupils contracted, obedient to the light; seemingly entirely insensible to what was going on around him. He talked incoherently: blowing the bellows, fishing, &c. His pulse was 100, and very small. Dr. Corlew advised: continuance of mustard applications; blister to lumbar region; frictions over spine with quadruple ammonia; Dover's powder, gr. ii; calomel gr. i, every hour.

Dr. Corlew saw him again at 5 P. M. He had now spoken none for two hours, and had kept his mouth nearly closed, so that his medicine had been forced. He was in great and almost constant jactitation, so that two strong men could scarcely keep him on the bed; no rigidity. The frictions had produced but very slight irritation.

I saw the patient with Dr. Corlew at 5½ to 6 P. M. I found him pale, cold, in great jactitation, without rigidity; mouth very slightly open, tongue palish, glossy; jaws not admitting of easy separation; groaning and moaning, taking notice of nothing, using no words. Pulse 100 to 108, counted with difficulty on account of the jactitation. Pupils of about natural size, examined with difficulty; no injection of conjunctivæ or of other visible tissues of eyes. Advised continuance of treatment.

Patient remained much in this condition till the morning of *Tuesday, the* 29*th* of March at 2 o'clock, when he died—66 hours after the probable invasion of the disease. On Monday, considerable irritation had been produced over the spine by caustic potass.

Post-mortem examination, 30 *hours after death.* The body was mottled by large ecchymoses. Two to three inches of adipose substance over abdomen, and nearly as much over thorax. Viscera of thorax and abdomen examined carefully, present no abnormal appearance. Lungs, healthy and crepitating; valves of heart normal; spleen, small; liver, of usual size and appearance; kidneys, do. All the abdominal organs inlaid in adipose substance; no elevation of Peyer's patches.

Upon opening the *cranium,* there was no unusual adhesion of the dura mater, which presented its ordinary appearance, and preserved its polish on the arachnoid side. Under the *cerebral arachnoid,* over the upper surface of both hemispheres, was seen a whitish deposit, as of purulent matter. On attempting to remove the arachnoid, the pia mater came with it, the two cohering so closely as not to admit of separation; and the purulent deposit was between them. On both sides of the cerebellum there was a considerable intermeningeal deposit of pus and lymph, also. The membranes having been detached from the *cerebrum,* it had not its usual whiteness and polish, but was dull and punctuated, like the inside of a strawberry, and on being scraped was found to be somewhat softened. The cut surface presented an unusual number of red points. The *cerebellum* seemed healthy; no unusual fluid in ventricles. No pus seen along *medulla oblongata.*

The *spinal marrow* being exposed from the front, at commencement of dorsal vertebræ, a considerable deposit of pus and lymph was found without softening of marrow. At middle of dorsal vertebræ there was another similar deposit with softening of the marrow.

This examination was conducted hastily, in the time between the passing of two trains of cars; but the account is reliable in so far as it goes; I present the case first, although it was not first in order of time, because I saw it in life, and have the history accurately, and assisted, also, at the post-mortem examination.

Case II.—A. G., aged 47, single, and a healthy man, a farmer and teamster, complained a little of "aching of the bones" on Saturday, *March* 3*d*. This was much increased on Sunday *the* 4*th*, but he slept well Sunday night. He woke early Monday morning, *the* 5*th*, complaining severely of headache, backache, and aching all over. At 8 o'clock, Dr. Corlew found him lying on his left side, with his head near the edge of the bed, his arms over the side of the bed, his legs flexed, his pupils much dilated, knowing nothing, with entire loss of muscular action, so that his hand raised would drop. His pulse was 80, small and easily compressed. Head not very hot; general heat, natural. Respiration not laboured. He was lying like a man in quiet sleep, and could not be roused. Dr. Corlew advised sinapisms to the epigastrium, back, and legs, and an emetic of ipecac. and calomel. The patient resisted, in a dogged manner, all medical or other interference. He was restless, tossing about, saying, "oh dear!" getting up, walking across the floor, putting his hands on to his back, revolving his body in a rigid way, sitting down like a man with a stiff neck. While he was in this state I was called to him; but before I reached Millbury (namely, before noon), his condition was considered as being improved (this being the first case of the disease in its epidemic form), and I was not desired to examine or prescribe for him, but was called away by Dr. Corlew to advise for a child in similar state, whose case, also, I shall here report.

The appearance of the man, thus far, had been such as to cause his neighbors to explain it by calling it a manifestation of "ugliness" rather than of disease—such was his restlessness and apparent spirit of rebellion. His emetico-cathartic having done its work, Dr. Corlew placed him, the next morning, upon Dover's powder and calomel, and the third day upon opium and camphor, of each one grain every three hours. This course seemed to afford some relief to his aching, but he was constantly in a half conscious state, answering questions accurately for a moment, and then talking to himself, driving his team, walking about and saying "oh dear, how I ache—how my back aches," till about the tenth day, when he sank into a typhoid state, with rigidity and opisthotonos. He lay on his back, constantly slipping down in bed. He answered questions irrelevantly. He had subsultus tendinum, and picked at the bed-clothes, and passed his urine in bed. He had a red dry stripe down the middle of the tongue. I saw him on the twelfth day of his disease, when all these symptoms were manifest. Some days before, if an attendant stepped towards him quickly, or thrust his hand towards him, he would retract, as if to dodge. He died on the thirteenth day of his disease—March 16.

A *Post-mortem examination* was made on the morning of the day following.

The body was large; limbs rigid. On opening the head, the veins of the *meninges* were found to be turgid with dark blood. There was no unusual serous fluid below the arachnoid, but here and there, between the convolutions of the cerebrum, there was a whitish deposit, which, on the removal of the membranes, was found to be between the pia mater and the arachnoid, dipping down between the convolutions, and being of the consistence of lymph.

The membranes were easily detached from the cerebrum, leaving its surface white, polished, and of the ordinary firmness. It is rare to see the cerebral substance harder; and the consistence was uniform; and the cut surface presented no unusual red points. The right lateral ventricle was distended with a serous fluid, containing flocculi of lymph and pus. The *choroid plexus* was red, like the comb of a cock. On removing the right hemisphere of the cerebrum from the skull, the anterior lobe presented an intermeningeal deposit of pus and lymph, of an inch in irregular diameter immediately over the orbit. The sella turcica was covered in like manner, and the optic nerves enveloped —the nerves themselves preserving their ordinary consistence. The right hemisphere having been removed, the deposit of pus and lymph dipping down between the convolutions on the other side, *in situ*, was quite remarkable. Neither tubercles, granulations, nor ramollissement, were found anywhere. At the base of the *cerebellum* and about the *medulla oblongata*, there was a good deal of lymph, with abundant pus, also; and this could be seen along down the *spinal marrow* as far as the eye could penetrate, all being bathed in pus. The *spinal marrow* was then exposed in front from upper dorsal vertebra to sacrum, and everywhere there was abundant pus between the pia mater and the arachnoid, especially on the posterior part, so that it could be spooned out. The spinal marrow itself and the nerves were quite firm. The right sciatic nerve, exposed by an incision through the gluteal region, presented nothing abnormal.

The lower lobe of the *right lung* was in a state of red hepatization—florid, solid, heavy, friable, containing no air. Lungs, otherwise, entirely healthy. Some subsidence posteriorly.

Spleen small; pancreas, and kidneys, and liver, presented nothing unusual; intestines, examined throughout their whole track, presented nothing abnormal; no development of Peyer's patches; the bladder was distended with urine.

Case III.—The only other post-mortem examination was made by Dr. Henry Sargent. The case was of a child in Sutton, aged five years, which died eight hours after the apparent invasion of the disease. There was nothing abnormal found in the examination, excepting a turgid state of the meningeal vessels, and a pulpy condition of the spinal marrow. The body was covered with purple petechiæ, a line or so in diameter, and not raised. The same were found on the peritoneal face of the stomach, and were confined to the peritoneum. I regret that I have no detail of the symptoms in this case. This little child's grandmother died in the same house the day following, of similar disease. No post-mortem examination was allowed.

Case IV.—C. L——, aged 3½ years, complained, Saturday afternoon, March 3d, of severe pain in the head, and vomited. The vomiting continued at intervals till the next afternoon. Dr. Corlew found the child, Sunday morning, at 10½ o'clock, in the following state, viz.: quiet, stupid; head and body hot; respiration natural; pulse quick; pupils dilated, not obeying the light. The tongue was red. At 1 P. M. the stupor had passed away, and there was partial consciousness, jactitation, contraction of pupils, rigidity of neck. I saw her on Monday—when there was jactitation, contraction of pupils, rigidity of neck, uncertain vision—the little patient putting her hand forward for my purse, which I held out for her, but missing it. She died on Wednesday, about ninety-six hours from the attack; no autopsy; no tubercular disease in family.

The aforegoing cases represent the epidemic, of which there have been sixteen cases within the circuit of four miles of a country not very thickly settled, and no recovery that can yet be relied on. There has been a striking similarity of symptoms in all the patients. Death occurred in one instance in six hours from the attack. The patient who lived longest is the one whose autopsy is reported—the death having occurred on the thirteenth day. Most have died within four days, and three within twenty-five hours.

In Millbury all have been males but one; in Sutton three were females. (Dr. Corlew is not sure that there were not more than three.) In Millbury the disease has been, for the most part, within a few rods from the Blackstone River; and, in one instance, there were two cases in one house. In Sutton the cases have been in various parts of the town, high and low.

Dr. Paine of Oxford, whose practice reaches also into Sutton, reports to me the following cases:—

G. W——, aged sixteen, was not well, March 9th, though at school. He complained after school of pain in his head and was chilly, and had not much sleep in the night. The morning following there was pain in the head and limbs, and soreness of the flesh. In the afternoon Dr. Paine found him pale, cold, senseless, with dilated pupils (unequally dilated), moaning, and in a good deal of jactitation. He used no words. The Doctor gave ipecac., applied mustard largely, and ordered ½ gr. calomel every hour. The next morning he had aroused a little, so that he knew the Doctor, and was for the most part rational, and had some warmth of the extremities. This continued during the day. At night he was hot, restless, sleepless, delirious, and so for the following day and night; after which his delirium gradually wore away. He had *opisthotonos on the* 14*th*, and double vision after restoration of reason; also considerable pain in the back. This young man is still (March 30th) under Dr. Paine's treatment—the same having consisted mostly in calomel and counter-irritation. [This case is not counted among the sixteen reported to me, in a manner, by Dr. Corlew.]

Dr. Paine reports another case, of a woman, aged thirty to forty, attacked on a Sunday and dying the next Friday, having never got out of the cold stage, nor reached consciousness. She took a good deal of powerful cathartic medicine, and was blistered over the spine of the neck and back. Dr. Paine saw her daily, in consultation. Her symptoms were like those of the last patient.

Another patient of Dr. Paine's, a hard-working, energetic, not very strong, woman, of sixty to seventy years of age, slender, of more than middling height, was taken, Sunday, March 20th, with pain in head, vertigo, pain in limbs, and soreness and chilliness. The pain in head continued till her death, Thursday night, *the* 24*th*. There was no delirium till the morning of the 23d, and then it was only occasional. There was strong opisthotonos, no dilatation of pupils, no noise in head, no paralysis, very little sleep, a great deal of jactitation. The bowels were easily moved by cathartics. The Doctor gave calomel, four or five grs., with a little ipecac., once in six hours or so, and made use of extensive counter-irritation. The treatment seemed to have no effect upon the disease.

Another patient of Dr. Paine's, a boy of four years of age, went to bed well, and waked in night delirious, and much frightened. Dr. Paine found him, the next morning, in bed, on his back, pale, cold, and with dilated pupils. The neck, chest, and abdomen, were covered with irregularly rounded purple petechiæ, of about a line in diameter, not raised and not disappearing on pressure. The intervening skin was the whitest Dr. Paine ever saw; and the veins on the abdomen and chest were dark purple, distended, and distinct even in their minutest ramifications, presenting a dark net-work in beautiful contrast with the perfect whiteness of the skin. The pulse could scarcely be felt. Convulsions soon came on, and the boy died within three hours from the time of Dr. Paine's first seeing him. The petechiæ covered the extremities also before death, but did not appear on the face.

Three days after, Dr. Paine was called to the mother of this child, complaining of her head and back and limbs, and of chilliness, and presenting the same petechiæ. After active purgative and counter-irritant treatment she was about work on the second day.

Three days after this, Dr. P. was called to another of her children, aged two years, in convulsions, and presenting the same eruption. This child is still sick

(March 30th), and has had opisthotonos and dilatation of the pupils, and, at first, some loss of consciousness.

I have introduced these latter cases of Dr. Paine's to suggest a comparison between this disease and the "Spotted Fever," so called, as described by Dr. Hale, Dr. H. B. C. Green, and others, and especially in the American edition of *Copland's Medical Dictionary*, as published by the Massachusetts Medical Society, under the article "Fever." This is the description of a disease with strongly marked cerebral symptoms; and the only autopsy I find recorded, (viz., that of Dr. Bowen's patient,) is an autopsy of cerebral meningitis, while the general account of post-mortuary appearances, in other cases, speaks of meningeal vessels turgid with blood, of adhesions between the two hemispheres, of bloody points on the cut surface of the cerebrum, and of distension of the lateral ventricles. My attention was first called to this, by remarks of Dr. John Green, a physician who was in large practice in Worcester and vicinity, during the prevalence of the epidemic of "spotted fever," in Worcester County, (1810 to 1814,) and who stated the analogy of symptoms before any autopsy had been made. The "spots" play but a very subordinate part in all the histories of the epidemic of thirty years ago, that I have seen, and were by no means constant. They gave the name to the epidemic only because its lesion was not known, and the name was picturesque. The name also made, perhaps, a part of its terror, and designated a kind of personification. So natural is the superstition which takes fright at severe disease which is "unknown"; and which also loses half its horror of the same disease, when the knife of the anatomist has fixed its locality, even though this do not diminish its danger;—a tacit recognition of confidence in science and medical skill.

In the epidemic which occurred at Schlestat and at Strasburg in 1841, (and of this last there is an excellent history by M. Forget, Professeur de Clinique, &c., at Strasburg, in the *Gazette Médicale de Paris* for 1842,) no account is made of spots, excepting of an herpetic eruption about the mouth and labia pudendi. There is no eruption spoken of in the epidemic at Versailles, at Avignon, or at Nancy—nor, in so far as I am informed, in the epidemics in Ireland.

P. S.—Worcester, April 26th 1849:—

With the facts at present before me, I have attempted only to make out the pathology of this epidemic. The consideration of its proper treatment, or only of the effect of the treatment it has had, would require much more extensive and careful investigation. I will only add, at present, a fact related to me two days since, by Dr. Rawson, of Grafton, who has had twelve cases of the epidemic in his own practice in Sutton, and who informs me that he designs to publish their history. Of the twelve, he lost only the first two. He depended mostly upon bleeding and purging—not hesitating to bleed even in the cold stage. He relates, particularly, the case of one patient whom he found cold, with a small pulse, and whom he bled at once, to the amount of a quart, the skin becoming warm, and the pulse bounding while the blood flowed. The patient was much relieved after the loss of blood, as they all were. The headache being very severe, two or three days after, Dr. Rawson bled him another quart with relief. The man got well.

April 23d. Etherization in Childbirth.—Dr. CHANNING read the following cases:—

Protracted Labour—Instrumental—Sulphuric Ether—Chloroform.—Mrs. ——, aged twenty-three, first labour, began March 9th, 1849, at about 1 A. M. I was called to her in the country, between 3 and 4 A. M. Labour was present; contractions moderate; os uteri somewhat dilated; strength good; cheerful. I returned to town between eight and nine, and went again at noon. Some progress, but no indications of delivery; os uteri not sufficiently dilated to settle what was the presentation; pains moderate. I remained the night, and left again for town in the morning. On my return I found the contractions stronger, suffering greater; and found the presentation to be *face to right acetabulum*; orbitar processes of the frontal bone distinctly and easily felt beneath the brim; cranium closely fixed in the pelvis, and no impression whatever made by the strong contractions now present; the suffering was great, and it was attempted to relieve it by inhalation of sulphuric ether. Very little relief came from a fair trial, and chloroform was substituted for it. This very soon produced rest, quiet sleep, easy respiration; the pulse, temperature, and complexion, remaining perfectly natural. In the latter part of the day, it being obvious that no benefit was to be looked for from the natural efforts, which continued as strong as ever, the forceps were applied. No progress was made, though all safe force was used. It being clear that the safety of the mother depended on speedy delivery, the forceps were removed and craniotomy done, and the child delivered. These efforts with instruments were made during unconsciousness from chloroform; the patient did not know when the child was born. Not the smallest injury was done, nor did the least morbid process occur in the puerperal state. Some anxiety was felt, as a lady in the neighbourhood, who was delivered about the same time, was seized with puerperal peritonitis which was speedily fatal.

Natural Labour—Laceration of Perineum without Etherization.—Mrs. ——, aged twenty-six, first labour, was taken with labour March 15th, very early in the morning. I was desired to see her about six A. M. I found her up, apparently in usual health, with occasional uterine contraction, which was so slight as hardly to attract attention. I was on my way to visit the above case, and left for her residence. I returned between eight and nine, and called again on my city patient. She was quite as comfortable as in the morning, and I left, to be called when needed. This was between 10 and 11 A. M. Upon reaching the house I found the child was born, and after a manner so easy that it was hardly thought necessary to send for aid. The infant had not been separated from the mother; this was now done, and the placenta soon followed. Upon examining the perineum, I ascertained that it was entirely torn through to the edge of the sphincter ani or termination of the rectum. The rent was felt to be as smooth as if made with a knife. The getting up was good, and union of the wound took place. I have made this record of this case because of the late discussion in the Society, of the question whether support of the perineum is ever necessary, and, farther, because of an assertion of a member of the London Westminster Medical Society, at a late meeting, who stated that chloroform produced rupture of the perineum. In my case no physician was present during delivery, the nurse gave no support, and no chloroform was employed. I do not remember to have met with so entire a laceration of the part as in this instance.

Protracted Labour—Instrumental—Laceration of Perineum without Etherization.—Mrs. ——, aged about thirty, first labour, March 15th. I was called out of town to see this case in consultation, at the close of the second day from its beginning. The *forehead* was towards the *right acetabulum,* the anterior fontanelle presenting, and the head firmly impacted in the pelvis. The contractions were strong, and suffering much; but it was thought unnecessary to deliver, and I left, to be called at any moment when the physicians in attendance judged farther assistance necessary. I was called about 8 A. M. following, sixteen hours after my first visit. It was now obvious that the time had come for delivery, and the child was delivered by the forceps. It was born alive. Etherization was neither desired nor attempted. Every precaution was taken to prevent injury to the perineum, but very extensive laceration took place, which was long in healing. The pressure on the bladder had deprived it of power to empty itself, and the catheter was required for some time. The child was born alive, and the woman ultimately did well.

Painful Labour—Instrumental—Chloric Ether.—Mrs. ——, about twenty-four, first labour, was taken ill early on the morning of March 29th. The uterine action was rapidly and most strongly developed, and the resistance of the unprepared organs to the passage of the child made the sufferings of the patient truly agonizing. I was desired to see her in consultation at about 1 P. M. Her medical attendant said to me, "I have sent for you to deliver this woman, for I feel sure that her life is endangered by her labour." I requested that chloric ether might be sent for, and proceeded to examine the patient. I found the *face* to the *symphysis pubis,* the *anterior fontanelle* presenting exactly in the *centre of the vagina.* The fontanelle was unusually large, and for a moment I thought the delay of delivery might be owing to dropsy of the cranium, and especially did I think some such cause must exist when I witnessed the strength of the uterine contractions, and the total want of impression upon the head. This had reached the pelvic outlet, and one would have expected delivery at any moment: this state of things, however, had existed many hours. The diagnosis was determined by examining the sutures. These were in their usual contact, or overlapping, making it clear that the great size of the *fontanelle* was the result of imperfect ossification.

As soon as the ether was obtained, the instrument was applied, and inhalation began immediately after. Extracting effort was soon made, and the child delivered with much ease. It cried at once, and lustily. Upon examination, the anterior fontanelle was found to be as described; both feet *clubbed,* and a large *spina bifida.* The child died a day or two after; the patient did perfectly well. Not a morbid occurrence disturbed her rapid convalescence. There was not the smallest local lesion of any kind. The perineum was not in the slightest degree injured. We have, in succession, three cases of certainly not common positions of the fœtal cranium during labour. All were instrumental. In two etherization was practiced; in two labour was much protracted; in one delivery was accomplished in a few hours after labour began. The result was wholly satisfactory. I was glad to find that early resort to instrumental delivery in one case above has the sanction of Prof. Simpson's high authority. He suggests that cases occur in which delay is lost time; not only so, that the chances to both mother and child may be greatly diminished by the continuance of protracted and ineffectual labour.

Arm Presentation—Chloric Ether.—Mrs. ——, about thirty, sixth labour, April 15th, about 1 A. M.; physician called at 5 A. M.; arm protruding from external organs; water had come away some time before. I saw this patient about 6 A. M. She is strong, plethoric, in full health; she told me I delivered her with the forceps five years ago. It was agreed to turn, and that chloric ether should be inhaled—strength, 35 per cent. chloroform. It produced the ordinary effects of chloroform about as soon as does chloroform itself. There was heavy profound sleep; noisy stertor, or snoring; perfect insensibility, and as perfect unconsciousness. Turning was accomplished with entire ease. The child was born alive, but did not long survive. Convalescence was rapid and uninterrupted.

Convulsions—Chloroform.— ——, aged fifteen, first labour, April 16th, at about 1 A. M. Began with vomiting. Physician found her in violent convulsions; was very fleshy, and in perfect health; no error of diet; full blood-letting, about ℥xxx; leeches to temple; terebinthinate enemata, cold to head. I was called to see her at about 1 P. M. Found her very ill; face pale; livid; respiration heavy, laborious; pulse from 192 to 200 in the minute, small, sharp; convulsions violent; os uteri dilatable; slightly dilated; show; head presenting. I advised chloroform; it was at once inhaled, and this very thoroughly; it checked the convulsions, so that no more occurred. The labour proceeded. At about 3 P. M. she recognized her mother, and gave other evidence of consciousness. I left her, soon after, doing perfectly well. This patient was carefully watched, and whenever a convulsion was threatened, which was denoted always by wide-staring, fixed eyes, chloroform was immediately inhaled. In this instance consciousness returned sooner than in any case which has come before me.

Natural Labour—Chloric Ether—Chloroform.—Mrs. ——, aged twenty-six; first labour April 17th, about 2 P M. In this case etherization was practiced simply to relieve intense suffering. Chloric ether; its effects were disagreeable, and very slight in regard to relief. Chloroform was substituted, and with entire relief. Labour was finished during unconsciousness and insensibility, without complaint, and entirely successful both with regard to mother and child.

Natural Labour—Chloric Ether.—Mrs. ——, aged twenty-four, first labour April 22d. I was called at 2 A. M., about four hours since beginning of labour. Very soon contractions grew strong, vehement, and the suffering was declared to be intolerable. Between three and four, inhalation of chloric ether, imperfect, effects slight. At length, however, the suffering was such that fair, full inspirations were practiced. Almost at once entire etherization occurred. It precisely resembled that which follows chloroform, as did that in the case of arm presentation; was as deep, and as grateful. The child was born alive, during entire unconsciousness. Weight 9℔. I left the mother perfectly well.

Placenta Prævia—Chloric Ether—Chloroform.—Mrs. —, aged about 24, fourth labor. In one only, the second, of the three preceding, was the fœtus carried to the full time: all born dead. Called about 5 A. M., Thursday, April 19th, on account of flowing. Found her vomiting, and learned she had vomited for some time. Face pale, œdematous: expression anxious, heavy. Labour began in night, no sleep; deep, heavy gaping, such as accompanies exhaustion; says stomach feels cold, and can bear nothing in it; keeps hand to chest, and complains of distress and sinking about præcordia. Pulse rapid, neither full nor strong. Flow very slight, requiring a napkin now and then; os uteri high, looking towards hollow of sacrum; cervix about half done away with, being of the length of the time of pregnancy, between the 7th and 8th month; os uteri scarcely admitting finger, round, firm. Very little flow accompanied or followed examination; much distress during uterine contractions, which were regular; and some pain at the time low in the back. I left, directing positive rest.

About 9 A. M. Things very much as at first call. No more hemorrhage than then. Rather stronger contractions, and more suffering; vomiting continues. Sitting up on the bed with the legs bent under her, a position, as I was informed, she assumed in her former labours. Is restless, changing place often. For the sinking at stomach directed a mixture of gin, warm water, and sugar, in teaspoonful quantities; and for the great pain and suffering during contractions, inhalation of chloric ether. The strength was 35 per cent. of chloroform to 4 of water, and the rest strong alcohol. It was poured upon a handkerchief and inhaled as felt to be needed. Its effect was to diminish pain, to procure rest, without sleep. It left consciousness unimpaired. I advised her to lie down, which she declined to do, the sitting position being the most agreeable. Os uteri remains as at first examination. I now left to be called if occasion required.

About 12, noon. Less hemorrhage than at any time. Appearance less satisfactory, face without colour; distressed; speaks feebly; gaping deeper and more frequent, manifesting increased exhaustion. Pulse as at first visit; contractions stronger. Has inhaled chloric ether occasionally, with slight diminution of suffering; no sleep. Is sitting as when last seen. Hemorrhage very suddenly and profusely declared itself. Examination showed os uteri unchanged, and the placenta completely over it. It was obvious that this state of things demanded immediate attention. I passed my left hand into the vagina, and reached the os uteri. It allowed two fingers only partially to enter it. Hemorrhage rapidly increased, and was more violent than is remembered in any case before met with. It was obvious that it could not be borne longer without fatal issue. The hand could not pass the os uteri but with a force which no circumstance could justify. I recollected at once the effect of chloroform in similar cases, in which, as in this, the suffering was extreme, hemorrhage excessive, and the danger imminent. About a teaspoonful was poured upon a folded handkerchief, and held toward the face. To be sure of the quantity, I poured it out myself, the nurse holding the handkerchief. The effects were rest, less expression of suffering, and questionless increased dilatability. The hemorrhage continued unabated. Inhalation was stopped; the hand was passed steadily, but without violence, between the placenta and womb, the membranes reached and ruptured, a leg readily reached, brought down with perfect ease, and the child delivered: the placenta followed immediately, and before division of the cord had been made. The patient was perfectly conscious of what happened, asked if the child was alive, and expressed the ordinary interest in it. Etherization was not perfect, but it had accomplished all the purposes designed in its use. The womb contracted at once and perfectly. I applied my hand over it to secure contraction and to prevent further hemorrhage. Complaint was made of the pain my pressure produced. A thick compress was placed upon the uterine tumour, and a swathe tightly drawn kept it in its place. Slight hemorrhage occurred after the delivery. The pulse soon after was not to be felt. Stimulants were at once given. Infusion of ergot with the powder freely exhibited. Some reaction now occurred. The mind was throughout perfect. There was no sighing, nor jactitation. She spoke of her state, of being better, and of being worse. Reaction was of short continuance, sinking came on, and in about two hours after delivery, and by a gradual failure, death took place.

Cases like the above are now and then met with. I remember two which occurred some years ago, which nearly resembled it. One, in which sudden hemorrhage took place in a latter month of pregnancy. It was very profuse. A week passed, and, on a Sunday morning, a still more violent flow happened. The physician was called. He found the placenta over the mouth of the womb, and urgent hemorrhage. I was asked to see this patient. I found her in extreme danger, and it was agreed that delivery should be attempted. This was successfully done. Reaction followed most threatening sinking. It continued about an hour, when, after very little further loss of blood, sinking returned, and speedy death. In another case, death occurred sooner after delivery, but in this hemorrhage continued from Thursday noon to Sunday night, when, on account of threatened death, delivery was accomplished. There was not a moment before this in which the attending physician or myself believed that forced delivery would have been justifiable or even possible. These are the only cases of death after placental presentation that have come under my own observation, and in these I was a consulted physician. A case of great interest was reported lately at a meeting of this Society. The placenta presented directly over the os uteri. Profuse flow came on. It was obvious to the physicians in attendance that death would soon occur unless delivery was accomplished. This was done by turning. The womb contracted well. Fair reaction came on, and everything promised well. But in about an hour after delivery, secondary hemorrhage occurred, I believe an exceedingly rare accident after placenta prævia, and which was almost immediately fatal. Etherization was not employed in either of these cases. I have met with two cases of placenta prævia, in which chloroform was inhaled with entire success. In one of these, not that in my first communication, I found the patient in a state which seemed utterly hopeless. She was without pulse, the skin was cold and exsanguious. I told the medical attendant that I thought it best to accomplish delivery when it could be done, and that chloroform would prevent suffering, and facilitate dilatation. It was agreed to try it. Perfect etherization was induced—the child was turned and delivered. The placenta at once followed. Reaction occurred, and the effects of hemorrhage were perfectly recovered from. I have never met with a case so wholly unpromising in which success was more perfect. The case in my first communication, of placenta prævia, was as hopeless as this. See a third, of the same character, at p. 297 of my Treatise on Etherization in child-birth.

In the case just reported, the cause of existing symptoms was a matter of much thought. It seemed that symptoms so declared of grave sinking, and depression of power could not depend upon the visible hemorrhage. They had some of them existed before labor began. The labor itself was premature: vomiting had existed some time, and ushered it in. The gaping was very striking, and, together with the blanched face and lips, the restlessness and general malaise, was calculated to produce uneasiness, and to suggest grave lesion as the cause. Internal hemorrhage became thus a matter for thought. I recollected a case to which I was called in consultation, but which was fatal before I reached the address, in which internal hemorrhage was the cause of death, and in which the blood was contained between the placenta and womb, without a drop appearing externally. Examination, after death, disclosed precisely this state of things. But in the above case there was *external hemorrhage,* slight, indeed, and constantly watched. The abdomen was very carefully examined by pressure, and the womb always found well contracted. The os uteri was open, which was not at all the case in the above instance referred to, and there was fair uterine contraction. Nay, this was most striking at my latest visit, at noon, and then the *hemorrhage was least.*

The membranes were entire, and a free channel existed between them and the womb, for any blood which might escape from vessels, left open by the separation of the placenta. The position of the patient, erect, as it regards the trunk, favoured the freest escape of blood through the open os uteri. Blood was actually flowing through it at my first visit, and did not entirely cease to flow.

The use of chloric ether was very beneficial in this case. It did not produce complete etherization, to be sure, for neither was sensibility nor consciousness, in any sense, abolished. Its effects were quiet, diminished suffering, and relief from the indescribable distress of which the patient was almost so constantly conscious. For the most part, she managed inhalation herself, using it when she desired its relief. Chloroform was substituted for chloric ether because of the pressing demand for its important agencies. Hemorrhage, as so frequently happens in these cases, at last occurred suddenly and violently, and at once threatened a fatal issue by its quantity; and how much was the danger added to by the exhausted state of the patient when labour begun. The use of chloroform was short. It diminished suffering, and promoted dilatability. These were the effects of all others to be desired. What of strength remained was not exhausted by suffering, and in delivery the prospect of safety only could be found. The womb contracted promptly, and retained its own contraction. The blood coagulated as firmly as I have found it to do in any case of hemorrhage. The respiratory function was carefully watched, and was steadily performed. Death occurred under circumstances which always accompany fatal hemorrhage, and about the characters of which no observing physician can have any doubt.

ART. III.—*Lithotrity and Lithotomy, with the use of Ether in those operations.*

By J. MASON WARREN, M. D.

WHEN ether was first introduced into use in surgical operations, it was thought by many that this substance would be found wholly inapplicable to the destruction of the stone in the bladder by crushing instruments. The objections raised were principally these: 1st. That, in order to preserve the integrity of the mucous membrane of the bladder, it was necessary that the patient should be possessed of his full consciousness, so as to give the surgeon warning when the coats of the organ were included in the instrument. 2d. That the operation might be pursued to a dangerous extent, unless information was given by the patient's feelings and powers of endurance, when it was proper to desist.

Such fears, as well as others which have been urged under similar circumstances, have, as will be shown by the following cases, proved fallacious. Not having observed any account of the application of ether to the performance of lithotrity, among the almost innumerable uses to which it has been applied, I have been led to bring together these instances and present them to the public. From these records it would appear, that the facility thus afforded is as great as in any class of surgical operations.

In one or two of these instances, from the great irritability of the bladder and urethra, as well as from the extreme hardness of the stone (which required a number of operations), it would have been necessary to relinquish the idea of employing lithotrity without the assistance of ether. In those where the ether was not made use of, it will be found that other points of interest rendered their introduction advisable. The case of lithotomy is instructive, both on account of the manner of formation of the stone, and the great facility afforded by the ether in the exploration and operation.

But few cases are required to establish the fact, that by the use of ether lithotrity will be much simplified, and a resort to it frequently made in instances till now rejected.

CASE I.—J. W——, forty years of age, had for a year or two been troubled with difficulty in passing water, attended with extreme irritability of the urethra, and from the latter cause had not been able to submit to an examination of the bladder by means of the catheter. At length, the distress being very severe, and the demand for an operation imperative, a catheter was introduced by his physician, and a calculus at once detected. The suffering from the introduction of the instrument was so agonizing, that he determined to submit to no further exploration, but requested Dr. J. C. Warren to visit him, and perform the operation of lithotomy.

After some conversation he was induced to take ether and undergo a second examination, which was done with so little pain and knowledge to himself, that he was persuaded to submit to lithotrity, which was performed by me in July, 1847. The patient being under the influence of ether, the stone was caught once or twice, and crushed without difficulty, causing the discharge of a number of fragments in the course of a few days.

At the end of a month the same operation was repeated, by which the entire destruction of the stone was completed. He was immediately afterwards enabled to resume the practice of his profession, which he continued a year. At the expiration of this time he was seized with the symptoms detailed in the following letter from his physician, Dr. A. L. Peirson, of Salem, where he resided and died, after a few days' confinement, on the morning of June 5th, 1848.

"J. W——, held court in Boston week before last. He had hematuria, and his general health suffered so much, that he was prompted to adjourn the court, but persevered till its term was finished, and came home on Wednesday, May 25th. His physician, Dr. Holyoke, saw him, and administered an infusion of uva ursi; and on Saturday, feeling as well as usual, he made arrangements for holding court at Martha's Vineyard, the ensuing week. He dined heartily on Saturday, and indulged imprudently at dessert in nuts and raisins. He probably took no wine, as he did not accustom himself so to do. On Saturday night he had a severe chill, with violent pain in the right hypochondriac and iliac regions. These symptoms persisted, with some abatement, till Friday morning, June 2d, when I first saw him. He then had much nervous excitement, a pulse very rapid and rather feeble, tympanitis, and abdominal tenderness, with acute soreness where the pain had been, and was hollow-eyed and anxious-looking. He took chloroform with great satisfaction, a moderate opiate, and a mild purge.

"My hopes and expectations were, that his difficulty was like what he often had experienced before from irritation, and which had always subsided after the employment of mild measures. I awaited the action of the alimentary canal, which I trusted would prove to have been the focus of irritation, causing sympathetic trouble in the urinary apparatus. He had one full evacuation, principally of fecal matter, with no change of symptoms that was satisfactory. The tympanitis, tenderness, and frequency of the pulse diminished, and his pain wholly left him on Saturday, June 3d. His weak pulse, haggard look, and the failure of relief from the laxative, gave Dr. H. and myself the greatest alarm. He gradually sunk, and died at four o'clock on Monday morning, after twenty-four hours of mild delirium.

"The death of this gentleman was apparently caused by disorganization of the right kidney. It contained a small calculus in its concavity. A smaller one was found in the left kidney, being the only morbid appearance discovered in that organ. I send you both calculi. There was infiltration of pus, and purulent, sanious, serous fluid into the cellular tissue around the gland. A small patch of pure pus covered a spot on the thin edge of the liver. On laying open the ureter and infundibulum, which were considerably enlarged, a dark, smoky-looking circle, almost entire sphacelation, surrounded each papilla. But little of the medullary portion seemed capable of performing its function. A quantity of sanious fluid, with hardly a character of urine, was found in the kidney. The bladder was perfectly sound, without a mark of inflammation, and was of natural size. There was no appearance of calculus, and only a few grains of the finest sand, such as he often passed."

Case II.—*Calculus of Oxalate of Lime—Lithotrity under Chloric Ether—Purulent Absorption.*—The three following cases occurred at the Massachusetts General Hospital, from the records of which institution the minutes are in part derived.

Nov. 24*th*, 1847. John Kelly, 20 years of age, had for the past ten years been troubled with difficulty about the urinary organs, manifested by occasional pain in passing water, pains in the loins on stooping, or making any exertions. Eighteen months since he contracted a chancre on the frænum, which was followed by a bubo in the groin. He recovered from these in about six months.

Nine weeks ago, after exposure to wet and cold, he found much difficulty in passing his water, the stream being small, tortuous, and attended with a smarting pain at the end of the penis. Since the present disease he has had a serous discharge, which at times is mixed with blood. In this state he entered the hospital, and on examination the urethra was found to be so contracted, as hardly to admit the smallest sized bougie.

The stricture was gradually dilated by the introduction of bougies increasing in size, but notwithstanding the enlarged passage, and the free egress of the urine, the patient still complained of much pain at the extremity of the glans penis, and was obliged to pass his water ten or twelve times in the twenty-four hours.

From these symptoms I suspected the existence of some foreign substance in the bladder. The urethra being extremely sensitive, and the patient making a great outcry at any attempt to sound him, he was placed under the influence of chloric ether, and a curved sound introduced, by which I at once detected a stone.

Having waited a few days to allow the bladder to recover from the effects of sounding, on March 11th, the operation of lithotrity was performed. The patient was first etherized with the chloric ether, so that the muscular system was in a complete state of relaxation: half a pint of warm water was now injected into the bladder. A small lithotrite was then introduced, and the stone at once seized, but it proved to be too hard. This instrument was withdrawn, and a larger and more powerful one substituted; by which the stone, having been caught, was broken with repeated strokes from the hammer. Some difficulty was found, on withdrawing the instrument, in passing the seat of the stricture, on account of its jaws being clogged with sand, and therefore imperfectly closed. The patient was entirely insensible during the whole operation, and not the slightest contraction of the bladder impeded the necessary manipulation.

The continuation of this history, as derived from the same records, is in substance as follows:—

An hour after the operation, the patient passed considerable urine with several pieces of gravel, about one-half the size of a pea, and some fine sand, in all nearly half a teaspoonful. The urine contained a little blood, which was apparently from the urethra.

At 3 P. M. he had a severe rigor, lasting fifteen minutes; passed urine once since the last report, some gravel came away with it. 5 P. M. some small pieces of the gravel which had lodged in the urethra, were removed with the forceps. The bladder was washed out with cold water; cold compresses were applied to the urethra, from which a little blood had been oozing.

At 8 P. M. he complained of headache, pulse full and hard. He was bled to twelve ounces with much relief.

At 11 P. M. pulse 120, soft; was sleeping quietly.

March 12*th*. Very comfortable; pulse 96. Some small fragments of calculi came away. P. M. pulse 140, some headache, no tenderness of bowels, and but little irritability of urethra; passage of urine free.

13*th*. He urinates freely, but has a little tenesmus on doing so. The smarting and pain are very slight; very little detritus in the urine. Twelve leeches to perinæum, with a warm bath and enema, were ordered.

In P. M. had a chill; now complains of malaise, pain in the shoulders, back of the neck, and weakness of the right arm. The countenance is better than yesterday; pulse 130.

14*th*. There is pain in the shoulders, with some superficial tendency. The urine is natural; but the passage of it is attended with some pain. There is no appetite.

On the 15th, another fragment of the calculus was removed from the urethra by the forceps.

16*th*. Pulse 120. The countenance is somewhat depressed. He complains of great pain in the right shoulder and arm, as well as between the shoulders; also in loins and left side of back. He also has tenderness along the course of the left carotid artery; countenance depressed; bowels free. He has no trouble in passing urine, and but little soreness of the urethra.

17*th*. His looks are more depressed than yesterday; pulse 120; pains about the shoulder and neck continue the same. 8 P. M. Since noon the pulse has risen; it is now 200, perfectly distinct and regular, but weak. The countenance is anxious, the voice feeble. He complains of great pain in the back and shoulders, and of distress at the epigastrium. He was allowed to take a small quantity of wine every half hour.

18*th*. He is much the same; pulse 212, full, and stronger than yesterday.

19*th*. Countenance is better, pulse 180, stronger and fuller; skin quite warm and moist; tongue clear, thirst slight; relishes broth; no dejection; considerable flatus in the intestines. In the afternoon, had pain in his neck and shoulders, also in his right foot. On examination a diffused swelling is discovered over the metatarsal bone of the little toe. A red patch had also formed over the sternal extremity of the left clavicle. Pulse 204, is sweating profusely; continue wine.

20*th*. Rather more feeble than yesterday. A plaster of the cerate of cantharides was applied to the inside of the right thigh. Pulse 210. He passes water by his own account, with more ease than he has done for two years. He continues to complain of great pain in his back and left shoulder, and of great distress about his heart.

21*st*. The pulse was 200.

22*d*. I opened an abscess over the tarso-metatarsal articulation of the left little toe, and found the bone denuded.

23*d*. Pulse 190. From this period the frequency of the pulse began to diminish, and he went on slowly improving until April 2d, when he was seized during the afternoon with a severe pain about the left clavicle and upper part of the left side of the chest. Great swelling had taken place in the part since noon, so as almost to bury the clavicle. It also extended up the neck of that side. The integuments over the clavicle were red and œdematous. He had great difficulty of breathing, and the pressure on the trachea almost produced suffocation. I immediately made a dissection down to the clavicle, but no pus could be discovered. The bone itself was evidently enlarged, and my impression from the symptoms was, that pus was forming in its interior.

The incision afforded him some ease by the abstraction of blood, and giving relief to the extreme tension of the surrounding integuments. A poultice was directed to be applied over the wound, and an opiate to be administered.

The pain was less on the following day. On the 21st of April, the swelling about the clavicle had nearly disappeared, but the inner third of the bone was felt to be enlarged.

From this period he slowly recovered, and left the hospital free of complaint.

Remarks.—The operation in this case was rapidly done, with no violence to the bladder, as shown by the symptoms at the time and afterwards, none of which had reference to that organ. The stone was small, and not being aware of the hardness of it, I thought it would yield to a small instrument. The power of this not proving sufficient, it was withdrawn, and another introduced; which, however, was so constructed as not to clear itself of the detritus or sand made by the crushing process. From this reason the instrument, which passed the obstruction, caused by the stricture, with ease, on its introduction, was arrested there on its withdrawal, from the jaws being imperfectly closed, and some force was required, though not amounting to violence.

It will be perceived that the fragments of stone all came away within a week of the operation. In three days after its performance, he began to have pain in his shoulders, after which all the symptoms denoting purulent absorption manifested themselves. The pulse, for eight or nine days after the 17th, remained constantly very rapid, ranging from 190 to 212. There seemed to be a tendency to the formation of pus in different parts of the body; it was found about the metatarsal bone in the foot, and was presumed to exist in the clavicle; from the latter it was probably absorbed without making any appearance outwardly.

This case will evidently come under the category of those placed by Velpeau and Civiale as instances of purulent absorption, sometimes caused by the simple introduction of a catheter, but more frequently in lithotrity by the irritation of fragments lodged in the urethra, and about the neck of the bladder.

The stone was analyzed by Dr. Bacon, one of our most distinguished chemists, who gave me the following note of its constituents: "It consists chiefly of oxalate of lime; it also contains considerable uric acid, and a small quantity of carbonate of lime. The concentric layers are very numerous. In some fragments under the microscope, I counted from ten to twenty, or even more, layers in the space of one-fiftieth of an inch. The radiated structure is also seen under the same circumstances, the radii being still finer than the layers which cross them at right angles."

Case III.—In the two following cases of vesico-vaginal fistula a calculus formed, either from a phosphatic deposition upon the catheter becoming detached, (thus acting as a nucleus,) or from the collection of calcareous matter about the edge of the fistulous opening.

S. S——, 27 years of age, entered the hospital April 3d, 1848, and gave the following account of herself. She had been confined three months previous; the child was large and had been dead for some time. After having been in labour thirty hours, during which time the pains were severe, the forceps were used, but without success; she was told that they had slipped from the head of the child. About ten hours after the trial of the forceps she was delivered without assistance. The deliverance took place on Monday at noon; she had then passed no urine for several hours, and none came from her until Tuesday afternoon, when a catheter was used, and about three pints drawn off. From that time until March 31st urine ran from the vagina constantly; on this day, without known cause, the urine was retained; her physician could find none with a catheter, and none flowed until the next day, when "something gave way, and some thick white matter was discharged," since when the urine has flowed as before.

A large discharge of very offensive matter from the vagina continued for several weeks after labor. She has not menstruated since confinement, but every month has severe pain in the back, and bearing down sensation in the pelvis. At such times she thinks the urine is more abundant.

April 3d. The catheter being introduced, about an ounce of very thick muco-purulent matter came through it. The instrument was directed to be left in the bladder. On examination, the vagina was found to be obliterated to within half an inch of the external organs; at the lower part of this obstruction was an opening, through which the urine escaped.

7th. The patient having been placed under the influence of chloric ether, the callous edges of the fistulous opening were thoroughly cauterized with a prepared stick of the potassa cum calce. She suffered no pain from the application. The subsequent position was upon her side, having in the bladder a large catheter provided with a shield, and constructed for the purpose.

By the 17th of April the fistulous opening had contracted, the urine continued to pass by the canula. The edges of the fistula were touched occasionally with the nitrate of silver, and in the course of another month it was completely obliterated.

On May 26th, the patient having complained frequently for a week before of pain in the back and loins, with difficulty of urinating, I passed a catheter, and immediately detected a calculus. The lithontriptic instrument was introduced, and the stone at once caught and crushed. On the following day all the fragments had passed in the urine.

This patient is now, April, 1849, in the enjoyment of good health, except at the period of menstruation, when she has a severe attack of pain in the hips and abdomen, attended with hysterical symptoms lasting usually four or five days, and requiring the use of leeches, purgatives, warm baths, and other debilitating remedies before the system is relieved. I have once or twice examined the uterus by the rectum at these periods, but found no perceptible fulness or projection of this organ into the bowel.* A question arises how these symptoms are ultimately to terminate; a point to which I shall have occasion to advert in the following case.

Case IV.—*Vesico-vaginal Fistula—Phosphatic Calculus.*—A. L——, æt. 32, entered the hospital March 9th, 1848. Fourteen weeks since she was delivered by forceps, after a labour of four days. During this period she was for the greater part of the time insensible from the effects of narcotic substances. The child was delivered on Tuesday.

On the following Thursday there was incontinence of urine, and it flowed constantly from the vagina, never passing by the urethra, or collecting in the bladder.

She has not menstruated since her labour, nor has she had any difficulty at the period when the menstrual secretion should appear. There has, however, been much milk in the breasts, but varying in degree; she has not noticed any relation between the quantity secreted and the catamenial period.

---

* *May 10th*—This patient for the last two weeks has been suffering under a paroxysm of unusual severity. The pain is so violent as to resist the use of almost any quantity of narcotic substances. She has had one or two attacks of vomiting, in which a large quantity of blood has been ejected. She makes the most earnest appeals for relief, and is willing to submit to any operation by which that point can be attained. From the entire obliteration of the vagina, and absence of fulness in the rectum, there seems to be no spot at which the uterus can be safely reached.

On examination of this patient the external organs were found excoriated by the urine, which was constantly dribbling away from her. The vagina was somewhat contracted throughout its whole length, but more especially at about three inches from the external organs, where there was a very marked constriction. Behind this was a longitudinal slit, with callous edges, on the anterior wall of the vagina, through which water was seen issuing from the bladder. A small irregular opening existed at the posterior part of the vagina near the situation, or in the place of the os uteri, which had entirely disappeared.

The patient was thoroughly etherized with chloric ether, as it was found almost impossible to make the slightest examination, on account of the extreme sensibility of the parts. The speculum of Ricord was used both for the examination and the operation. The edges of the fistula were now cauterized so as to produce a slough, with the potassa cum calce, and a catheter introduced. This instrument, which had been made for the purpose, was half an inch in diameter, five inches long, with a shield an inch from its external orifice.

The patient suffered but little from the caustic, and no urine passed through the fistula for several days. It was touched occasionally with creasote; and on the 18th, no urine having passed through the fistula for some time, the catheter was omitted, and she was allowed to walk about.

On the 23d of April, she reported that no urine passed by the vagina. When the catheter was first omitted, the water dribbled away from the urethra, which from long disuse had apparently lost its power of retention. This power, however, was by degrees restored.

On May 7th an examination was made both by the vagina with a speculum, and by the bladder with a catheter. The fistulous opening was hardly perceptible. In the bladder was found a calculus, apparently about the size of that mentioned in the preceding case. Immediately I sent for the lithontriptic instrument, with which the stone was easily caught and crushed. On the following day the fragments of the stone came away with the urine. They were found to be composed of the phosphate of lime.

This patient remained in the hospital until the latter part of May, when she had the full command over the urine. During the whole of this time there was no appearance of the menstrual secretion; but at stated periods, at an interval of four weeks, an increased secretion of milk took place in the breasts.

I have recently seen this woman. She stated, that she had been well since she left the hospital. About three months since, nearly a year after her delivery, the catamenial function was restored, and has continued regular since. This must have had its exit at the orifice, which took the place of the os uteri, and which undoubtedly at the commencement was partially occluded.

On over distention of the bladder a small quantity of urine was found to escape from the vagina. An examination with the speculum, proved the old opening to have closed; and that the urine seemed to escape from the same fissure in the uterus with the catamenia.

In connection with this subject it may be interesting to advert to one or two other cases of vesico-vaginal fistula in regard to the same particular. For I have not been able to find that any author has given the results of his experience, as to the probable manner in which the menstrual fluid makes its escape, in cases where the orifice is obstructed by the sloughing and inflammation following difficult labours, which has occurred in about one-half of the instances under my observation.

In one case of sloughing of the bladder and occlusion of the os uteri, in which I operated a year since by sutures, the fissure was completely cured. The menstrual secretion has never been restored. Once in four weeks, at the catamenial period, the patient is seized with the most distressing pains in the uterine region, attended with sickness and sometimes vomiting. These symptoms continue a week, and cause the utmost distress. I have repeatedly examined the supposed seat of the os uteri, to determine if any projection took place there at those periods, with the idea of puncturing, but have never had any encouragement by the appearance to justify an operation.

In another woman, where the whole lower half of the bladder was lost by sloughing, the same symptoms were manifested. At one of these periods, at the distance of a year from their commencement, the pains became violent and forcing, as in labour. At this moment a rupture of some part of the uterus into the vagina took place, and the patient was, as she states, at once deluged with blood, so that long-continued fainting took place, from which she was with difficulty recovered. The menstrual function has since gone on regularly.

Although these remarks may seem irrelevant at the present time, yet if they should elicit any information from other sources on this interesting subject, they will not be without their good result.

In regard to the formation of the calculus in these two cases, it cannot be attributed to any negligence in the use of the catheter, as it was regularly withdrawn and cleansed, once or twice in the twenty-four hours. I should rather be disposed to attribute it to the collection of the phosphates, in and around the fistulous openings, as we sometimes see after cases of lithotomy.

Case V.—*Cystic Oxide Calculus—Lithotrity.*—J. C——, aged forty-three, of Montgomery County, New York, applied to me in July 1848, and gave the following history of his case: Seven years ago he was seized with a violent pain in his side, which was attributed by his physician to the passage of a calculus through the ureter. Shortly afterwards a calculus, of the size of a pea, was voided with his urine.

He has a number of times since passed calculi; and on one occasion, after a severe paroxysm of pain, says he could tell distinctly the moment when the calculus entered the bladder; he arose from his bed immediately and passed the stone.

Three months since, while engaged in ploughing, he felt a pain in his bladder, the commencement of the sufferings which have continued to increase until the present time. He is obliged to pass his water frequently; it is occasionally bloody. He cannot ride in a carriage without extreme pain; in walking, he is compelled to move very slowly.

I sounded the patient with a small lithotrite, and at once detected a calculus. This being embraced by the jaws of the instrument, gave a measurement on the scale of an inch and a half. Some irritation of the bladder followed this examination, which was made after the fatigue and excitement of a long journey, and it was necessary to keep him quiet for some days, and use remedies, before any operation could be performed.

On July 13th, the bladder being injected with half a pint of warm rain water, the stone was immediately seized by the crushing instrument, and broken by means of the screw without much difficulty.

15*th.* He had suffered no inconvenience from the operation, and in fact feels relieved. A quantity of sand and fragments of stone have passed with the urine.

The operation was repeated on the 18th, 23d, 26th, 29th, and Aug. 2d. After each operation the patient passed a number of fragments, and once or twice it was necessary to remove by the forceps portions which had become lodged in the fossa navicularis, and were too large to pass easily the external orifice of the urethra. On Aug. 3d, a fragment, which had been engaged in this way, and which it was found impossible to extract entire, was seized by a powerful pair of dressing forceps, crushed, and thus extracted piecemeal.

On the 9th he returned home well, and on the 25th I received from him a letter, in which he stated that he had experienced no difficulty in passing his water, and was otherwise in good health.

Dr. Bacon kindly made an analysis of the stone, which is contained in the following note:—

"The calculus of which you sent me fragments yesterday for analysis, proves to be of a rare and interesting kind. It is composed of *cystine*, or *cystic oxide.*

"The yellow portions consist of cystine in a state of purity, with the exception of a trace of phosphate of lime. In the white friable parts, which appear to be interspersed in the yellow masses without forming regular layers, the cystine is mixed with much phosphate of lime and a little triple phosphate.

"Your specimens agree pretty closely in physical characters with the description given by authors of this very uncommon form of calculus."

Case VI.—*Oxalate of Lime Calculus—Lithotrity.*—P. C——, fifteen years of age, applied to me in Oct. 1848, with symptoms of great irritability of the bladder, such as usually accompany the existence of a foreign body in that organ. At this period he declined all examination, although I at once warned him of the probable nature of the disease.

In November, nearly a month afterwards, finding that no remedies had any effect in relieving his sufferings, he submitted to the operation of sounding, and I detected quite a large calculus.

His mother gave the following history of his case: He had been troubled in the urinary organs from infancy. When three years of age he had a violent attack of pain in the region of the right kidney, for which he was leeched and blistered. He recovered for the time, but afterwards was seized with a pain lower down on the same side, attended with difficulty in passing water, and with bloody urine. From that time to the present he has almost constantly been troubled about these parts. The last summer, for one or two weeks, the symptoms seemed almost entirely to disappear, but for the past three months they have all been aggravated. He is obliged to pass his water every half hour, and in his sleep it escapes involuntarily. He cannot get into bed without assistance; cannot walk fast without pain; passes blood occasionally. His appetite is good, and, considering the suffering he has undergone, the flesh is firm, strong, and of good colour.

On account of the size and hardness of the stone, and the age of the patient, I advised the operation of lithotomy, but the parents would not listen to a cutting operation, where any other method was available. I, therefore, determined to etherize the patient, make an attempt with the crushing instruments, and if the stone was found to resist farther than was thought safe, to relinquish this operation and advise lithotomy, which his friends would probably consent to, when the former was found to be impracticable.

On Nov. 16th the first operation was done, Drs. Minot, Adams, and M'Gowan assisting me. The patient was placed under the influence of chloric ether. An attempt was made to introduce the catheter, for the purpose of injecting the bladder, but as soon as it reached that organ a violent contraction took place, so that the instrument was embraced, and all manœuvres of it prevented. The etherization was then pushed to total insensibility, which is usually manifested by the occurrence of stertorous breathing, and the perfect relaxation of all muscular actions. The bladder was now injected with the greatest ease, the crushing instrument passed in, and the stone seized. It measured one and a half inches. Attempts were made to crush it by means of the screw, but this was found impossible on account of its hardness. The hold was therefore relaxed, the stone seized in a new position, more on one side, and was then broken down without any great violence. The fragments were then crushed a second and even a third time.

During the operation the patient was very quiet. He voided the water before he became conscious, and was left in a tranquil sleep. A warm hip-bath was directed, and the free drinking of gum Arabic and water.

20th.—He has suffered more or less from pain in the bladder since the operation. A number of fragments of the calculus have been passed, which, on being analyzed by Dr. Bacon, were found to consist of the oxalate of lime, combined with the triple phosphate, showing itself in glittering transparent crystals. The latter seemed to have been deposited on the surface, and were excessively sharp and irritating to the touch.

For the last four days the boy has been up and about the house. To-day the operation was again repeated, the stone seized, and at first seemed to resist the action both of the screw and hammer, but with a little perseverance it was finally crushed by means of percussion. The urine that passed after the operation was a little discoloured with blood, produced apparently by the action of the sharp edges of the calculus on the mucous coat of the bladder, as there were never at any period traces of its coats on the instrument.

Professor May, of Washington, was present, and assisted me in this operation.

The following day he voided quite a number of pieces, and among others apparently the original calculus that had passed from the kidneys; it was of a lightish brown colour, about the size of a small bean.

The operation was repeated six times at intervals of a week. The time devoted to the seizing of the stone was generally about five minutes. From the great hardness of its composition it could not be crushed into sand, as is the case with the phosphatic and uric acid calculi, but the fragments were large, and required each to be seized separately and crushed.

Twice in the course of this period portions became engaged in the orifice of the urethra, and it was necessary to administer ether and extract them, as the parts were so excessively sensitive that nothing could be performed without the assistance of this agent.

Finally, the last fragment of the stone, which for some days had been lodged at the neck of the bladder, and which I had once pushed back, became suddenly fixed at the membranous part of the urethra, so as entirely to obstruct the course of the urine.

In order to effect the dislodgment of this remnant, the patient was etherized with chloric ether. Hunter's forceps were now introduced, and after some manœuvres, and with considerable difficulty, the stone was at length caught and dragged to the fossa navicularis. From this spot it was found impossible to extract it without laceration of the urethra; the hold on it was therefore relinquished. Forceps were now introduced, and attempts made to break it, which at first were ineffectual on account of its extreme hardness; but by perseverance, and by breaking it away gradually, this was at length effected, and the whole removed. No bad effects followed this apparent violence inflicted on the urethra. From that time the symptoms of stone were entirely relieved, and the patient has now perfectly regained his health.

At present, he passes water no oftener than natural, which is remarkable, considering the constant irritation kept up in the bladder for a period of thirteen years.

The following case of stone, in which the operation of lithotomy was performed, possesses some interest, both from the manner of the formation of the calculus, and from the great assistance afforded by the ether in the examination of the bladder, and the subsequent operation. This case has already been referred to by Dr. J. C. Warren, in his "Remarks on Etherization."

Case VII.—On Nov. 7th, 1847, I saw, in consultation with Dr. Morrill, a little child of Mr. Colbeck, four years of age, affected with symptoms of some foreign substance in the bladder. The child was thin, delicate, and tall of his age. The history of his present disease was as follows.

Two years and a half previous, as the child was making water in the street, another boy, in attempting to wrest a knife from him, pulled him over and dragged him through a heap of gravel. When taken up by his mother, a quantity of this substance was found adherent to the glans penis. For twenty-four hours he had an almost complete stoppage of water. At the end of that period an examination being made, disclosed a small bit of gravel lodged just within the orifice of the urethra. It was removed by a knitting-needle, and immediate relief obtained.

Some months after the preceding occurrence, the child began to complain of difficulty in passing his water, attended with frequent desire to evacuate the bladder. These, with intervals of ease, have continued till within a few months. Since then the symptoms have become much aggravated, so as to make it imperative to have active measures taken for his relief; the sufferings both by day and night being almost constant, and the calls for evacuating the bladder incessant.

All attempts at the introduction of a sound being resisted by the patient, he was etherized, and I at once discovered a calculus. At a subsequent period he was again sounded, and the stone detected.

On Nov. 16th, an operation having been determined on, the child was fully etherized, and a sound being placed in the bladder, the stone was felt by all the gentlemen present; viz. Drs. Warren, Townsend, Morrill, and Parkman. Lithotomy was immediately performed by the bi-lateral method; the incision of the prostate being made with a straight probe-pointed bistoury. The stone was removed by a large polypus forceps.

No bad symptoms followed the operation. On the following day the water passed by the urethra; on the third by the wound; and continued to do so for a week, when it resumed its natural course.

On page 95 of the "Appendix to Etherization, with surgical Remarks," already alluded to, will be found a description of the stone, with some comments upon its presumed method of introduction, by Dr. J. C. Warren, in these words:—

> "The stone was about half an inch long, the fourth of an inch thick, and in form of a flattened oval. It was sawn by Dr. J. B. S. Jackson. The exterior layer consisted of a whitish deposit, the sixteenth of an inch in thickness, and composed apparently of triple phosphate. The layers within this were of a brownish colour, like that of the phosphate of lime, and were about half a line in thickness. In the midst of these was a harder substance, about a line in diameter, which appeared to be silicious. Its outline could not be exactly distinguished from the surrounding layer of brown deposit.
>
> "The retrograde passage of the apparent nucleus into the bladder may excite surprise, unless we take into consideration the inverted action of the urethra, by which bodies received into it are so often conveyed from without into this organ, where they serve as the nuclei of stones. The introduction of this nucleus may receive an additional explanation from the fact, that the gravel-stone, removed by the mother, prevented the passage of urine forced into the urethra by the strong contractions of the bladder, and this not escaping, was driven back by the contractions of the urethra, carrying along the inner stone, which formed the nucleus.

It will be evident, on a review of the above cases, that lithotrity would have been impracticable in the first, second, and sixth instances, had it not been for the great assistance afforded by etherization. The quietness with which the preliminary examinations were allowed, may be strongly contrasted with the manner in which these are frequently done, amidst the struggles of the patient, and the violent contractions of the bladder; while the surgeon is left dissatisfied and uncertain, and finds himself obliged to make one or two repetitions before a sufficiently accurate diagnosis can be made to warrant him in proceeding to a surgical operation.

I was much struck by this fact shortly after etherization was introduced among us, when called in consultation to a female labouring under the symptoms of stone in the bladder. It was agreed that she should be sounded, and, if a stone was discovered, that lithotrity under ether should be done on the following day. The sounding produced the most severe suffering, on account of the extreme irritability of the mucous coat of the bladder, added to the natural sensitiveness of the patient. A stone was struck, and, by the introduction of a finger into the vagina, the sound being in the bladder, it could be embraced between the instrument on one side, and the finger and vesico-vaginal septum on the other. It was apparently adherent; but in consequence of the contractions of the bladder, and the struggles of the patient, the operation was rendered extremely difficult.

On the following day I visited her with the intention of performing lithotrity, but found, however, that during the night, owing to the violent expulsive efforts produced by sounding, and which had continued afterwards, the calculus had become detached and expelled: it was about the size of a bean. As some of the symptoms of stone persisted, it was determined to make another examination, to satisfy ourselves that the bladder was free from any further foreign substance. At this time ether was given, and every part of the bladder explored with the catheter, without the slightest complaint from the patient. No obstruction was made to the free use of the instrument by the irritability of the bladder, which had on the day previous so much impeded the necessary manœuvres.

Although the experience of lithotrity under the use of ether is thus far limited to a few cases, yet we think these are sufficient to show that this operation will probably assume greater importance, and come into more general use, now that a repetition of the requisite manipulation can be made without suffering. In many cases which hitherto must have been submitted to lithotomy, on account of the extreme irritability of the organs concerned, lithotrity will hereafter be adopted in preference.

The case of cystic oxide calculus given above is interesting from the extreme rarity of this kind of stone. M. Civiale, whose great experience is well known, in his work on the stone and gravel, published in 1840, states that he has met with but four cases of it. In the Hunterian Museum, out of six hundred and forty-nine calculi, it appears by the catalogue there are but three of the cystic oxide.

It has been stated that an hereditary disposition existed in many of these cases; two of those under the care of M. Civiale were brothers. In the present case this disease was not inherited, according to the account of the patient.

ART. IV.—*On Nitrate of Silver in Jaundice.* By J. F. PEEBLES, M. D., of Petersburgh, Va.

THE value of nitrate of silver in jaundice was revealed to me incidentally. A man, who had been completely jaundiced for a period of two months, consulted me about some troublesome stomach symptoms. The patient had imbibed the impression that mercurials would be deemed necessary for the removal of his jaundice, and having a deep-rooted prejudice against that whole class of remedies, he begged that I would take no notice of that disease, which really annoyed him but little, and prescribe exclusively for his gastric distress. I ordered him the crystallized nitrate of silver, conceiving that remedy indicated for these latter symptoms.

He was not seen again for a week. The jaundice, then, had entirely disappeared, and the patient had already discontinued the medicine, believing himself cured. At my suggestion, however, he continued its use several days longer, and since that time, a period of nearly three years, he has had no return of the icterus, and has in every respect enjoyed excellent health. Since then I have on many occasions tested the value and verified the efficacy of this remedy in the treatment of chronic idiopathic jaundice.

I am aware that various remedies have been from time to time promulgated, and held in high repute for the treatment of this disease, or more properly, *symptom* of disease; and that many such should find favour, is not inconsistent with our knowledge of the nature of jaundice.

Whilst thus admonished against an unnecessary enlargement of this list, I am yet emboldened to urge this simple method of treatment in uncomplicated jaundice,—in those cases, in short, in which the removal of the hue of the tissues is the most prominent indication; for the following reasons: First, it is prompt and efficacious; secondly, it produces neither sickness nor disturbance of any kind; and lastly, its dose is small, and the form of its administration agreeable and convenient. The latter reasons are really more weighty than would seem at first sight. Many jaundiced persons are but little complaining, and often are about as usual. To such, it is clear a remedy would strongly recommend itself, which was characterized by an insensible action, and an entire absence of all annoying influences.

Jaundice we know is removed every day by various means, but it is surely a desideratum with the physician, one which is always appreciated by the patient, to select those agents which will effect his object with the least possible inconvenience to the sufferer.

It is not my purpose to go into the pathology of jaundice. But, as it has already been intimated, that the treatment is not of universal application, it is necessary that I should expose the principles which have guided me in its employment. My remarks, therefore, shall be confined to the delineation of so much of its nature as will be necessary for this object.

Icterus is often of simple origin. A man may become completely jaundiced before he is aware of any very marked deviation from his usual health.

An emotion of the mind has been known to produce it. In such cases there always exists a *predisposition;* and I have observed that this predisposition consists in a chronic gastric disorder, often too little manifested to excite the patient's attention. Dyspepsia and chronic gastric irritation, therefore, are the chief predisposing causes of this form of jaundice. Three-fourths of these cases coming under my notice have occurred in persons addicted to the excessive use of tobacco. The method by which this habit produces the predisposition is of easy demonstration; it establishes chronic irritation of the gastric mucous membrane, which irritation, as well as the jaundice which follows, is speedily removed by the use of the nitrate. The co-existence of jaundice with disease of the primæ viæ is well enough known. It generally, to some extent, accompanies ileus. Nor is the recommendation of remedies for its removal, addressed solely to the stomach, possessed of any novelty. In simple chronic idiopathic jaundice the stomach is always the most complaining. It is often preceded by a disposition to spit up the food, of several months' duration. Then the urine is observed to gain, and the feces to lose, colour. The gastric distress increases as the disease progresses; and when it is fully developed the blandest article of diet creates a most unpleasant feeling of distension and weight in the stomach. There is, in addition, pain in the epigastrium, extending around, and sometimes covering, the entire hepatic region. It is in such cases as these that the nitrate of silver has proved itself of such benefit.

The method by which the remedy is supposed to act in the cure of jaundice, can be readily divined after the above hints. This method is, in my opinion, clearly illustrated by its prompt action in the following case. A man, who, previously to the attack, had suffered several months from a tendency to diarrhœa, whilst just beginning to convalesce from pneumonia rapidly became jaundiced. His acute pulmonary disease had been treated by local depletion, calomel, and opium, and he was slightly ptyalized. After having for some days a dry and loaded tongue, the crusts broke away leaving a clean, glazed, and very red surface.

It was precisely at this juncture that jaundice manifested itself. Here there existed unequivocal testimony of gastro-enteric irritation. The condition of the mucous surface of the internal organs became itself a separate disease, and, as the pneumonia was decidedly on the wane, nitrate of silver was ordered for its removal.

The patient took two doses, and in eighteen hours the hue of the tissues had disappeared, and there followed a rapid decrease of colour in the urine with return of healthy alvine discharges. On the third day not a trace of the jaundice existed. Nitrate of silver according to this, it appears, cures jaundice by modifying the condition of the mucous membrane of the stomach and primæ viæ.

Stronger proof illustrating this point could not, in my opinion, be adduced than that afforded by the case just quoted.

This view of its mode of operation, it will be perceived, brings down the pathology of jaundice within very narrow limits; and the question, Can simple gastro-enteric disorder of any kind give rise to jaundice? at once arises. Only an approximation to a perfect solution of such question is at present attainable. Facts sufficient exist, however, it appears, to warrant such an inference. Drs. Graves and Stokes long ago held that jaundice might arise from the presence of glairy mucus in the duodenum, obstructing the orifice of the common duct; and most writers mention that it may arise from turgescence of the coats of this intestine. Now, the presence of viscid mucus in the duodenum clearly indicates a modified and deranged state of its mucous surface, a fact which, if the views we have above expressed be correct, is of itself sufficient to give rise to jaundice without the supposition of an obstruction of the common duct. That such obstruction is not necessary to originate jaundice is well known. The disease does not always exist when it occurs, and it is often present when there is proof of no such obstruction existing. But whether this be necessary or not, we have the authority of these able physicians that the disease may *originate* in the duodenum. This is one of the most interesting points in the whole inquiry. It separates the disease—we mean that form of it under consideration—from the idea of hepatic disorder, and has great practical bearing upon its treatment.

I confess, my opinion, that original hepatic disorder is absent in simple idiopathic jaundice, if not formed, was certainly confirmed by witnessing the action of nitrate of silver in its removal. In none of the cases treated have I found it necessary to resort to mercurials or other cholagogues, to restore proper hepatic action; on the contrary, I have invariably found this to occur without such agents, indicated by healthily coloured alvine discharges, appearing always subsequently, although in a few days after the skin begins to clear, and by the recovery of the tone of the digestive organs.

The part which the liver plays in its production is not of easy solution. We know that extensive disease of the organ may exist without jaundice.

The idea of cystic obstruction causing re-absorption of bile is not now universally entertained by the best pathologists. Pain in the hepatic region, it is true, accompanies the disorder. We know, also, that it is attended by nephritic uneasiness; yet no one will say that disease of the kidneys exists, apart from an irritation of those organs, palpably due to the excess of new matter in the urine. A similar cause, it may be fairly urged, gives rise to the hepatic uneasiness.

The tendency of modern investigation points more to the assimilating functions for an explanation of jaundice. Bile pigment is in excess. Sherer's analysis of the bile found in the gall-bladder of a jaundiced girl, demonstrated that its preponderance over that in healthy bile was enormous. He contends also that only this pigment and not bile elements is found in the urine. Simon, although he asserts that these latter do exist in the urine of jaundiced patients, yet evidently shows that their presence is not universal. Lecanu found only bile pigment in the blood of jaundiced patients. Further speculation respecting the origin of jaundice, however interesting, is not necessary for our present design. We set out to prove that there was nothing in the nature of idiopathic jaundice inconsistent with the idea of nitrate of silver, from its known effects on the system, having power to remove it, and we trust we have effected our object. Only a few words will be necessary to devote to its manner of administration.

The treatment is begun by giving ¾ to a grain of the crystallized nitrate of silver twice a day. It is important that it be given on an empty stomach. The remedy I have found will remove the disease without this precaution, but much sooner with it. Ten days I have found the utmost time required; often improvement is observed in the hue of the skin on the second day.

But the patient experiences great relief immediately. The uneasiness of the stomach and the sense of fulness after eating disappears, and there is improvement in the digestion. When the disease is accompanied by constipation, as it often is, for the sake of convenience a laxative is combined. A pill, given twice a-day, of 1 gr. argent. nitr. cryst., 3 grs. p. rhei, ext. taraxac. qs., answers a good purpose. Of course the patient must observe an unirritating diet.

ART. V.—*Notes of Hospital Cases.* By HENRY HARTSHORNE, M. D., of Philadelphia.

Nitrate of Silver in Chronic Gastritis.—By patients affected with indigestion accompanied by epigastric tenderness, very positive advantage was derived under Dr. Wood's treatment from the use of the argent. nitrat.,—beginning with gr. ¼ and increasing to gr. ½, thrice daily, with half the quantity, or less, of opium. In some instances vomiting, before frequent, ceased on the administration of this combination in pill. No other remedy seemed so particularly adapted to the chronic inflammation of the primæ viæ, which constitutes one form of dyspepsia.

Chronic Dysentery treated by Sulphate of Zinc Enemata.—One case of three months' standing, was relieved entirely in a few days by the use, twice daily, of an injection of four ounces of water, containing eight grains of zinci sulphas, with forty drops of laudanum.

One much more recent, originating in the house, but resisting the ordinary astringent and opiate preparations, was cured by a single enema containing a scruple of the sulphate, with starch. This last application, however, was somewhat painful, from the strength of the solution.

Neuralgia.—In the cases noted, this obstinate disorder received but a palliative impression from ext. belladonnæ, except where combined with ferri carb., to which tonic the curative effect might be ascribed.

As an external application, the saturated tincture of aconite root was found the most efficient agent, perhaps not even excepting the veratria ointment. A considerable number of patients were at once relieved of tic douloureux, lumbago, &c., by a few applications of this tincture. Its internal use was not so obviously beneficial, perhaps from the smallness of the dose.

Neuralgia relieved by Venesection.—A female patient, aged between fifty and sixty, confined to her bed with a fractured thigh, had been long subject to severe pain connected apparently with the supra and infra-orbital nerves of one orbit. After confinement for several weeks on her back, she was affected with symptoms threatening apoplexy; and was bled moderately from the arm. The neuralgic pain from this time ceased and did not return while she was in the house.

Hemicrania treated by Quinine and Valerian.—Thomas Barker, aged thirty-five, for two months before entering the hospital had suffered from severe pain in one side of his head, with slight roaring in the ear, and also pain in the same side of the body, about the lower ribs. No evidence of pectoral disease existed, and none of cerebral—more than the slight noise in the left ear, and perhaps a very little hardness of hearing.

Quin. sulph., gr. xvj, with ol. valerian, gtt. xxx, were given in divided doses through the day, after purgation by a colchicum mixture. He was a little better the first day, but worse the next two. The quinine was then increased to gr. xxiv daily, and he took at bedtime vin. colch. rad., gtt. xx, with liq. morph. sulphat., f℥ij. Under this treatment he improved at once—the pain both of his head and side left him entirely—the medicines were gradually diminished in dose, and in a few days he went out well.

Intermittent Neuralgia with two weeks interval.—Garrett Joyce, aged thirteen, had for several months regularly recurring attacks of intense pain over the left brow and in the eye—at intervals, first of a month or two, gradually lessening down to two weeks, when he was admitted to the hospital. The pain lasted for two or three days, and then for two weeks he was perfectly well. The interesting fact with regard to it was, that it entirely resisted the action of quinine as an antiperiodic, freely and variously given, for several different intervals. The only effect produced was the postponement of the paroxysm for a day or two. Ferri sub. carb. and ext. belladonnæ were next tried, without the slightest influence. A blister was then made to draw upon the nucha just at the expected time, and dressed with morph. acetat.; but the pain came on as usual. Cupping produced slight palliation. Purgation during the intermission effected no change. Concentrated tincture of aconite root was applied during the attack, and administered internally for several weeks, with no perceptible result whatever.

The boy's health continued apparently perfect in the intervals, but the paroxysm was regular to a day.

Quinine in Intermittent.—No good reason appeared in cases observed for preferring five or six grain doses several hours apart, to one or two grains every hour; in fact, the resistance of the stomach often compelled the latter to be chosen, in the form of pill, with small portions of opium when the bowels were also irritable. In two or three cases of *pernicious* intermittent, thirty-six grains were required to check a paroxysm. Such cases rarely occur in the hospital.

It was proved repeatedly that the presence of headache, jaundice, or local determinations during the intermissions of miasmatic fever, did not contraindicate quinine. Such symptoms, in three very decided cases, were promptly removed under its influence, with the ague.

Remittent fever presented abundantly in the fall, in some cases of considerable violence, from southern ports, as well as from the neighbourhood of the city. The treatment was almost invariably successful with Dr. Gerhard, by early purgation, occasionally venesection, and quinine on the first *commencement* of remission. In threatening cases it was given without waiting for such a change, and produced it.

The impression was formed, that of the two elements of fall fever—the febrile condition and the *miasm-cause*—it is the latter only that is addressed by the remedy in question. It arrests fever by acting as an antidote to the poison which produces it.

Can such facts then point to its use with a similar intention in the exacerbation of other fevers, entirely different in cause, as the typhus and typhoid? Certainly not.

The writer saw no facts, in any case of its administration, to justify any other appellation for its effects than those of tonic and nervous stimulant. The large quantities in which some southern practitioners assert it to have a sedative action on the pulse, were not given; and probably all such action is to be ascribed to one of two causes—either cerebral oppression, analogous to narcotism, or the *antidotal* influence above spoken of, under which fever is arrested as a symptom of miasm-poisoning, by its specific.

Typhus Fever.—Of the "ship-fever" prevailing so extensively during last winter, a considerable number of cases entered the hospital, although never more than five or six were allowed at one time in the wards. For many years instances considered to be of true typhus fever had occasionally occurred; but never, unless in one individual, had it extended to others in the house.

Nor did the character of active contagion display itself during this epidemic; although, after a succession of cases had been for some months in the wards, a manifest prevalence or *infection* was observed—affecting several patients entered for other complaints, the watchman of the house, who fell a victim to its violence, and myself, then resident physician.

Five fatal cases were noted: one from the complication of acute laryngitis in the advanced stage. The others sank away with no manifest organic lesion. In one, the only post-mortem sign was a very slight and confined softening in the centre of the brain; in others nothing was detected.

All had sudaminæ, deafness, and stupor; several, subsultus tendinum and low, muttering delirium; others, a more active and restless wandering. Upon all was found a measles-like eruption, differing from that of typhoid fever in not disappearing under pressure, and in existing all over the body and limbs. The worst had decided petechiæ; several, diarrhœa; several, bronchitic irritation; and some, epistaxis. There was no characteristic odour about any of them. A tabular or numerical catalogue of cases and symptoms, in a number below one hundred, would avail no more than general results.

They differed from the ordinary cases of continued fever, called typhoid, from the city and elsewhere, not only in origin, but in physiognomy, rapidity of sinking when fatal, the character of the eruption, less frequency of intestinal disorder, and more rapid convalescence. An opportunity occurred to Dr. Wood of making a distinct diagnosis during the life of two patients, and confirming it by the post-mortem comparison. In one was found very striking enlargement, as well as ulceration of the glands of Peyer; in the other an entirely different appearance of the intestine. Excessive development of those glands was sometimes observed, but no ulceration of them, in cases of ship-fever.

At least half of the cases were treated without stimulation, beyond the use of quinine in grain doses after the febrile crisis had arrived. This term is used because a period was distinctly marked in several cases besides my own, after which *excitement* gave way to *debility*, as the character of the condition.

This was noticed both in favourable and unfavourable cases, as the time when excitant medicines were best borne.

In many, however, at this late stage, and in some from the beginning, stimulus was called for and was liberally used. Almost all the fatal instances were of those who were admitted in a prostrate condition after some weeks' illness, and did not react under brandy-punch, oil of turpentine, and carbonate of ammonia. Some patients who recovered had been bled before admission, and one suffered, just before death, from phlebitis in the vein which had been opened. None were bled in the house. Venesection and free leeching were, however, used in my own case at the onset, with great relief and advantage.

Undoubtedly, constitutional condition is of great consequence in determining the value of antiphlogistic treatment in this disease. In those depressed by suffering, sea-travelling, and starvation, it may be almost an axiom that "stimulation is essential in typhus." But from the personal experience of an attack, otherwise treated, although attended with very considerable prostration in its course, it appears evident that typhus may occur in individuals and in modes in which the lancet may preserve when alcohol would destroy.

But in depressed cases with little vigour of reaction, the action of wine whey, in even a positively febrile state, with full, accelerated pulse, and hot, dry skin, of a few days' standing, was in some instances noted as promptly beneficial. It was frequently the only remedy prescribed by Dr. Gerhard, and appeared in such to be an excellent stimulating diaphoretic. This was, perhaps, sometimes the case when a stronger excitant would have done harm.

Typhoid Fever.—It may be again merely remarked that sufficient evidence appeared to be given of the propriety of a diagnosis between ship-fever, and other forms of typhus, and the ordinary continued fever of this country, as it appears in the hospital at all times—designated typhoid fever. A number of very striking dissections were made in the institution, showing palpably the peculiar lesion of dothinenteritis. This does not, of course, prove the enteric lesion to be the cause or main feature of the disease, nor interfere with the fact that, in a number of true ship-fever cases, diarrhœa, tympanitis, and abdominal tenderness occurred.

In one patient admitted after a month's illness, supposed to be with typhoid fever, death, caused by intractable peritonitis, allowed us to discover perforation of the intestine. The same termination was inferred to have resulted in a young man who died suddenly a few days after being discharged as cured of a distinctly marked attack of that fever. The complication of pneumonia destroyed several cases in the winter of '46–7.

Coup de Soleil.—On the 11th, 12th, and 13th, of 7mo. 1846, four cases of sun-stroke were brought into the hospital. Several others occurred in the city during the same intensely hot days, all reported as fatal.

The first admitted was, when brought in, nearly pulseless, and unconscious; head very hot. Ice was at once applied to the head, two or three dry and one or two cut cups were placed on the back of the neck, and carbonate of ammonia and brandy punch, were administered by the mouth. Sinapisms were also applied to the extremities and epigastrium. Reaction gradually came on, the skin becoming at last intensely hot, and active delirium supervening for a few hours. The stimulus was withdrawn, and the fever was only of about twenty-four hours' duration. This patient was a temperate man, aged about thirty years.

The second was a man notoriously intemperate in his habits. His pulse when he was brought in was full; breathing stertorous; stupor complete; pupils contracted; skin very hot. He vomited repeatedly. Ice was put around the head, and mustard to the abdomen and legs, and cut cups, which brought very little blood, to the nucha and temples. He could not be made to swallow anything; an enema of spirits of turpentine was administered. He died about two hours after admission.

The third case was entirely moribund when brought there, and expired in less than ten minutes. He was said to have been a temperate man, waiter at a hotel; a little unwell the day before, but walking about at noon of the day of his death. The precise history of these cases, as to the amount of fatigue and exposure, we could not learn.

The last was a mild attack. A young man while walking in the sun carrying a bundle, was attacked with intense headache, vomiting, and purging. When he entered the house, several hours having elapsed, his headache was still great, stomach sick, pulse accelerated and somewhat feeble, head warm. He was put into a warm sitting-bath, with a cold douche on his head, and twenty drops of spirit. ammon. aromat. were given every half hour for an hour or two. The case seemed then to resolve itself into one of simple fever, and was treated by ice to the head, and the liq. ammon. acetat. He entirely recovered in a few days.

Meningitis.—An acute case of great violence, under Dr. Wood, exemplified the use, after free venesection, &c., of a blister to the *whole scalp;* and also the safety of free stimulation after such an inflammation, when required by the condition of the forces. He recovered fully.

A man suffering with *chronic* meningitis, following an acute attack, evinced an immediate improvement on the breaking out and subsidence of a mild erysipelatous eruption on the face. The commencement of his cure was dated from that event, and it was soon completed.

A negro with acute bronchitis, somewhat obstinate, recovered also immediately on the breaking out of erysipelas of the face and neck, seeming to be critical.

Use of a Seton.—This remedy is so disagreeable as to make all facts in its favour interesting. An Irishman, named Macbeth, who had slight paralysis and frequent convulsions, or rather fainting fits, for several months, was cured of these symptoms entirely in about four weeks by little treatment besides a seton in the back of the neck.

This man had a singular fancy. He said, that "he could think, remember, and calculate, much better with the left side of his head than with the right—of which he had almost lost the use." Are there not some facts which seem to show that the brain is a double organ, like those of the senses which originate from it?

The seton was also found a valuable agent in treatment of obstinate hysteria.

Local Paralysis cured.—A bricklayer was admitted who had lost the power of extending or forcibly flexing the fingers of the left hand. The arm was unaffected. He had first noticed the paralysis on waking in the morning, a week or two before. The only cerebral symptom was at that time a sense of heaviness and unusual drowsiness. The treatment by Dr. Pepper was purgation, cupping to the nucha, and a blister to the forearm, dressed twice daily with pulv. strychniæ, gr. ss. In a week he had almost entirely regained the free use of the hand.

A few months afterwards another case, exactly similar, occurred in the wards.

Acetate of Lead.—The capacity of this preparation to produce symptoms of lead poisoning was demonstrated in two or three cases of aneurism of the aorta in which it was therapeutically used.

Paralysis of the Bladder treated by cold Injections.— ——— Hinchman, an old man, was, on entering the hospital, entirely unable to dispense with the use of the catheter, twice a day. This state continued for several months. But after commencing the use of cold water injections every day through a catheter, aided by strychnia internally, in one month he acquired the power of relieving himself always without the instrument. He expressed great immediate relief from the injection, of the sense of irritation existing in the bladder.

Catheterism.—Perhaps it is a familiar fact to all surgeons, that in patients with enlarged prostate the best position for the introduction of the catheter is the *standing* posture. Gravitation thus assists the removal of the gland from the urethra. It is noted merely as having been proved in several instances by the house surgeons on duty in the hospital.

Phthisis Pulmonalis without Symptoms.—I omitted to mention in a previous connection the case of a man admitted in the winter of 1847, whose only complaint was of general debility. He was about forty-five years of age. He had no cough, sputum, nor pain in the chest. A physician had told him that his lungs were perfectly sound; but auscultation soon revealed the existence of pneumothorax of the left side. He died in a few days. The autopsy displayed the left lung to be a collapsed mass of tubercle in the bottom of the chest, leaving a depth of four inches between it and the ribs, half filled with serum. The right lung was also tuberculous, but capable of respiratory action.

ART. VI.—*On the use of the Oxide of Silver in certain forms of Menorrhagia, with Cases and Remarks.* By J. J. THWEATT, M. D., Petersburg, Va.

THE preparations of silver have recently attracted considerable attention, especially in diseases of the mucous membranes, attended with undue secretion. I was led to try the powers of the oxide of silver in menorrhagia and irregular menstruation, from the high eulogy passed upon it by Dr. Lane; and the success which followed its use was so encouraging as to induce me to direct my attention particularly to its mode of action, and the forms of menorrhagia to which it is applicable.

My experience with this medicine has now been sufficient to induce me to repose great confidence in it when properly and judiciously applied. I do not pretend to claim for it the appellation of a specific, but I am persuaded that, "*cæteris paribus,*" all that is claimed for mercury in syphilis, or quinine in intermittent fever, can be claimed for the oxide of silver in menorrhagia, in its different forms. It is eminently superior to the acetate of lead, and other mineral and vegetable astringents usually employed in this disease.

The oxide of silver is best adapted to those forms of menorrhagia which depend on an undue excitation of the uterine organs, unaccompanied with high inflammatory action. Cases often present themselves where profuse hemorrhage makes its appearance at the usual menstrual period, or immediately after it has passed; in these cases there is an extraordinary excitation of the nervous system. The oxide of silver here often acts like a charm: calms the perturbation of the nervous system, and arrests the hemorrhage by its astringent qualities. It should be given in large doses, and repeated at short intervals until some effect is apparent. Women after parturition are frequently troubled with a sanguineous discharge, distinct from the lochia, which is difficult to remove by the usual remedies. The oxide of silver is an infallible remedy for this pathological condition.

There is one form of menorrhagia often met with, which often baffles the skill and experience of the ablest practitioners to remove; and I know of no form of disease which tries more the patience of both patient and physician. A remedy, therefore, in which any reliance can be put, is certainly a desideratum. I refer to the too frequent occurrence of the menses. The quantity of the discharge is sometimes larger and sometimes smaller than it naturally should be; the intervals are short, and, in many instances, the patients are never entirely free from some discharge; exhaustion and debility are the usual accompaniments of this morbid condition; impoverishment of the blood followed by a cachectic condition of the general system; the nervous system is deeply involved; palpitations of the heart become a great annoyance. There is likewise a general depression of the moral faculties; the digestive organs are ultimately implicated, and there is dyspepsia in its multifarious forms,—gastralgia, pyrosis, &c. &c. Spinal irritation is of frequent occurrence;

the patient complains during the short intervals (when there are any) of dull pains in the pelvic region, with the sensation of weight or a bearing down motion in the uterus.

The oxide of silver is the only remedy in which any confidence can be placed to remove these symptoms. I have, under these circumstances, employed in vain the various preparations of iron and lead, together with the mineral acids: they afforded only temporary relief; but in every case in which I prescribed the oxide of silver, its action has been satisfactory.

I am aware that it is the opinion of those medical gentlemen who have experimented with this medicine, that it is inferior to the preparations of iron in those cases where the hemorrhagic tendency depends upon a general anemic condition of the system. This is the opinion of Dr. Lane; it is with all due deference to such high authority, that I express a contrary opinion. In this form of menorrhagia the true indication to be met, is the arrest of the abnormal secretion; this drainage of the general system. If we can accomplish this (under all circumstances) desirable object, we will have paved the way for the use of the ferruginous preparations, and the carrying out beneficially the proper hygienic regulations for the restoration of the health of our patient.

My experience with the oxide of silver induces me to believe that its main action is upon the capillary circulation, and particularly upon the uterine capillary system; that its powers are specifically directed to the uterine system. Its operation upon the nervous system is that of a mild and unirritating tonic.

It is almost superfluous to state that this medicine is entirely nugatory, if not prejudicial, in those cases of menorrhagia which depend upon organic lesions. It never should be prescribed in cases of high inflammatory action; until after the subjugation of the inflammatory symptoms by antiphlogistic means, when it may be administered with great benefit.

I am in the habit of prescribing this medicine in larger doses than usual. The only pathological effects I have witnessed from its use, in two grain doses, two or three times a day, were uneasiness in the lower bowels, sometimes attended with slight tormina and tenesmus. These symptoms were easily removed by an anodyne enema. They often, however, require no attention on the part of the physician. The usual dose, when intended to be continued for any length of time, is a half grain to one grain, twice or three times a day, according to circumstances: it should always be combined with a small quantity of opium or morphia. The oxide of silver blackens the stools.

Subjoined are a few of the most important cases in which I have employed this remedy.

Case I.—*Oct.* 1847. Mrs. T., mother of three children; has enjoyed generally good health, with the exception of slight dyspeptic symptoms. For six months has been subject to an immoderate flow of the menses, which has weakened her very much; debility so great that she cannot take exercise without palpitations of the heart, with a sense of suffocation; anorexia; costive bowels;

condition of the system slightly anemic; pains in the pelvic region; menstruation irregular, frequent, and abundant, intervals eight to twelve days; does not believe that she is ever entirely free from sanguineous discharge; no pain during menstruation. Ordered her the following pills: ℞.—Argenti oxidi gr. xij; pulv. opii gr. i. Div. in pil. xij. One pill to be taken morning and night, bowels to be moved by enema. Saw her the third day; had taken six grains of the oxide of silver; the discharge was diminished. Says she feels better than she has for six months; appetite improved, bowels open. Ordered to continue the pills, mild nourishment, gentle exercise. Saw her again the sixth day; had taken all of the pills, twelve grains of the oxide; the discharge had entirely ceased; says she is as well as ever she was: the dyspeptic symptoms had entirely disappeared; general condition much improved; discontinued the pills; ordered a generous diet. She menstruated healthily at the regular period; has had no return of the hemorrhage; enjoys now excellent health.

Case II.—Mrs.——, æt. 38, of a good constitution; mother of five children, last child five years old; health generally good; for eight or twelve months has menstruated irregularly, menstruation attended with severe pains in the back, with a sense of weight in the pelvis; the pains in the back continue with more or less severity, during the interval of menses; suffers very much from it; the catamenia occurs every ten or fifteen days, quantity not too abundant; lasts two or three days; a very slight discharge from the vagina during the short interval; all the other functions healthy; prescribed cups to the spine, rest; and one of the following pills night and morning: ℞.—Argenti oxidi gr. v; morph. acetat. gr. ss. Div. in pil. x. She took the pills during the interval of menstruation. I saw her after she had taken the ten pills, and found her condition much improved; does not complain so much of pain in the back. The sensation of weight in the pelvis had almost entirely disappeared. Directed to continue the pills; bowels, if necessary, to be kept open by enema. Did not see her again for fifteen days, had menstruated after an interval of twenty days; no discharge from the vagina, no pain in the back; general health excellent; discontinued the medicine and ceased my attendance.

Case III.—*Sept.* 1847. Molly, coloured woman, of a sound, robust constitution, æt. 42, had had several children; was suddenly attacked, without any ostensible cause, with profuse hemorrhage. When I saw her, the blood was streaming from the vagina; pulse weak, very much alarmed; her menstruation had been regular up to this time. I ordered her immediately to take one of the following pills, every half hour, until I should see her. ℞.—Argenti oxidi gr. vi; pulv. opii. gr. ss. Div. in pil. iii.

I saw her after the lapse of an hour; had taken two of the pills; hemorrhage had abated; was calm and tranquil; ordered the third pill to be taken. I saw her again at night, the hemorrhage had entirely stopped. On the following morning, I found her entirely free from any disease. Ordered a nourishing diet, and left her.

Remarks.—The above case was one of pure idiopathic menorrhagia, a form rarely met with. The case is a very interesting one, insomuch as it demonstrated the extraordinary efficacy of the oxide of silver. It will be perceived, that the oxide was administered in two grain doses, and frequently repeated. No bad effects followed these large doses. The therapeutic action of this medicine was rapid and certain.

Case IV.—*Feb. 27th,* 1849. Mrs. ——, of a nervous temperament, been in delicate health for some time; was suddenly seized without apparent cause, with pains in the loins and lower portion of the abdomen, quickly followed by considerable hemorrhage; became much alarmed; pulse small and quick. Skin bathed in cold perspiration; pains in the back and hypogastric region, intermittent. Says she menstruated on the first of January, menstruated again ten days previous to the present attack, lasted only two days. Prescribed the following. ℞.—Argenti oxidi gr. vi; morph. acetat. gr. $\frac{1}{8}$; pulv. glycyrrh. q. s. Divide in pil. iij, one pill to be taken immediately and repeated in half an hour. (My friend Dr. S. A. Hinton here took charge of this case. I am indebted to his kindness for the following report.)

I saw the case after she had taken two pills of the oxide of silver; the hemorrhage had greatly diminished; was quiet and tranquil. Ordered the third pill to be given. Saw her again at night; hemorrhage had almost entirely stopped; pain in the back and abdomen relieved. Discontinued the medicine.

28th. Bowels rather loose; complains of pain in the lower bowels, with slight tormina and tenesmus. Prescribed an opium pill, to be taken at bed-time.

March 1st. Slept well during the night; no pain in the bowels or back, scanty discharge from the vagina. Prescription, a small dose of Henry's magnesia.

2d. The discharge scarcely perceptible. Ordered rest, and a bland nourishment.

3d. Doing well.

Art. VII.—*Congenital Phimosis.* By M. G. Delaney, M. D., Surgeon U. S. Navy.

Congenital phimosis is a more common malformation than physicians in general practice are aware of.

In hospitals devoted to the treatment of venereal disease alone, many cases are met with. The best opportunity, however, for the observance of this defect is to be found in military practice; and particularly in that portion of it which includes the examination of recruits at a rendezvous. Within the space of two months I had examined and passed at the naval rendezvous in this city one hundred and seventeen men. Of these, twelve were affected with congenital phimosis; and all but two were impotent. All had attempted sexual union, but two only succeeded, according to their own statement, which, judging from appearances, I considered doubtful.

The feeling of amativeness was so weak in these men, that they had essayed a connection with women rather from a sense of curiosity than passion. I have scarcely ever seen twelve men with more ample muscular developments in all parts save the organs of generation. The respective ages were: 1 of 28 years; 1 of 26; 1 of 24; 1 of 23; 4 of 22; 3 of 21, and 1 of 18 years.

The penis was invariably small, or the size of that of a boy of twelve years;

coronal gland very small, and prepucial opening but little larger in diameter than the meatus. The testes, from having been but rarely excited, corresponded in size with the penis. The want of sexual desire, or the existence of impotency in these cases, is manifestly owing to the phimosis. The coronal gland, being bound down by the prepuce, could neither receive the necessary nervous stimulus, nor expand to the capacity requisite for virile enjoyment; consequently, in the majority of cases, congenital phimosis begets, what it only can beget, impotency. This misfortune can only be remedied by a surgical operation. The congenital impotent is a different being, in appearance, from the one who is a poor victim of masturbation. In the former case you may have the finest form with the most perfect health—a health never broken in upon by erotic ideas or wasting excesses—the latter I need not describe to any practitioner;—its suicidal wretchedness is known to all.

Masturbation and congenital phimosis never exist together: they are, in a measure, physical incompatibles.

A moral question may obtrude itself, whether the surgeon is justifiable in remedying a malformation which is a safeguard to virtue, and a cloak of protection to its owner; but which, at the same time, renders him incapable of fulfilling the duties of the citizen, by marrying and raising up children.

The necessity of an operation is not so imperative in this case, as in its parallel, a closed vagina, where the functional disturbance incident to maturity demands a division of the hymen.

The Jewish rite of circumcision is founded in reason, and beneficial in result. It may be said that every part given to us by nature has its use; it is so in a state of nature: but in one of civilization, the use of the prepuce cannot be designated with more accuracy than that of the thyroid gland. In the islands of the Pacific only has the prepuce a conventional usefulness. There, the otherwise naked native considers himself in full dress when the prepuce is drawn tightly over the gland, and its end tied up with a fanciful bit of sennet, or coloured grass. The native would no sooner be seen in the presence of a woman with an uncovered gland, than would the civilized man without a shirt. There, then, and there only, does the prepuce subserve a material and fashionable purpose: which, however, gradually falls into disuse, in the progress of civilization.

I have had occasion, in many instances, to circumcise natives of the islands—those acting on board whale ships as sailors. The prepuce, in those cases, served as a cloak to venereal matter, as well as to modesty; and had to be sacrificed. The most disgusting case of venereal is that wherein the mucous coat of the prepuce is plentifully studded with chancres. In fact, the great mortality following venereal in the Pacific Islands is owing—notwithstanding the constant habit of bathing—to this tying up of the matter of discharging chancres, in the bag of the prepuce.

I would, therefore, recommend the adoption of the Jewish practice of circumcision upon all children—not as a religious ceremony, nor before the end of the first year—but as a preventive, in a certain degree, of venereal disease: and, in the absence of personal abuse, as a removal of the cause of impotency. In three instances I have slit up the prepuce in adults, for the relief of impotency; and although the operation (as then practiced) left a flap neither ornamental nor useful, yet it subserved the main point; and in two of the cases the men became reputable husbands. The best mode of operation is that recommended and practiced by Ricord: which is a great improvement, not only upon the Jewish, but every other method. His method is as follows: "The penis is allowed to remain in its natural position, and no traction is used: a circular mark is made with ink upon the prepuce, about two lines anterior to the base of the glans, and parallel to the corona: a long and strong needle, its point covered with a wax head, is then introduced between the glans and prepuce, and made to pierce the whole thickness of the latter, on the mesial line, and a little in front of the circular mark. The mucous membrane and skin of the prepuce are thus fixed, and the needle is allowed to remain. Behind it, and in a longitudinal direction, a fenestrated forceps, with notched edges, is then firmly applied. The fenestræ of the instrument correspond to the circular mark and the glans; at this stage of the operation the latter is to be pushed backwards. The next step is to pass sutures, five or six in number, through the fenestræ; and when all the threads are applied, the prepuce is shaved off with a bistoury made to glide between the needle and forceps. The latter is then withdrawn carefully, so as not to disturb the ligatures. The assistant should be desired to press the forceps very tightly when the prepuce is being shaved off; if this be neglected, the prepuce will yield, and the sutures will be cut. When the forceps is removed, the arteries which are noticed to bleed, should be tied or subjected to torsion; the threads which pass above and below the glans are then divided in their centre, and the respective ends of each half resulting from this section are tied, to bring the mucous membrane in contact with the skin. Of course there will be twice as many sutures as there were threads passed." Treatment—the usual cold water dressing. It might not be correct to say that ten out of every hundred men, as in the present instance, are affected with congenital phimosis; but many are the unfortunate subjects of this malformation who live a single and unenviable life, without being able to fulfil the duties of men: and who, moreover, are deprived of that sympathy which other misfortunes elicit from our fellows by the secrecy which attaches to such cases. The operation upon the adult, though obviating impotency, yet does not visibly increase the bulk of the organ; which, compressed from infancy—unlike other parts of the body—had neither "grown with the growth, nor strengthened with the strength."

The sum of human happiness and human numbers would be increased by the universal adoption of circumcision.

Boston, *May* 1*st*, 1849.

ART. VIII.—*Traumatic Tetanus treated with Chloroform. Recovery.*—Read before the "Boston Society for Observations in Medicine and the Collateral Sciences." By EDWARD H. CLARKE, M. D.

D. L——, male, married, æt. 27, is a native of St. Thomas, but for several years past has been a resident of Boston. Was formerly a sailor, but three or four years since commenced the occupation of a stevedore. Hair and eyes brown; smokes tobacco a great deal: otherwise temperate. Of nervous temperament, medium stature, muscular, but spare and thin. According to the statement of his wife, was attacked with trismus two years since, in the island of St. Thomas, which followed a scratch upon his face, and from which he readily recovered.

On the morning of February 28, 1849, he wounded the back of his thumb slightly with a saw. As the wound bled but little he paid no attention to it, but continued his work as usual throughout the day, and slept well at night. During March 1st he complained of feeling restless and uneasy, and discontinued work earlier than usual on that account, but was not troubled by the wound. He did not sleep well that night; and on the morning of March 2d, said his thumb was "sore," and poulticed it. Being unable to work on account of his uneasy sensations, he called for relief at the office of a neighbouring physician, who prescribed a cathartic pill, containing blue mass, to be followed by a senna draught. His sleep was again disturbed, but he felt better on the next morning. He was "not right," however, as he expressed it, and ascribed his uneasy sensations to the medicine, which produced two or three copious dejections. The poultice upon his thumb was continued. He was restless during the next night, but felt pretty well on the fourth. Had two dejections during that day, and vomited twice. Wound was not painful, but poultice was continued. Slept well during the night of the 4th, and rose the next morning, thinking that he had fully recovered. Soon after getting up, however, was obliged to lie down again, on account of a "feeling of faintness," accompanied with dyspnœa.

I was called at ten A. M. of March 5th, and found the patient in bed, and presenting the following symptoms: Decubitus dorsal; countenance anxious; brow knit; mental faculties undisturbed; pulse 120, small and hard; respiration varying from forty to sixty in the minute, short and catching; could not auscultate the lungs on account of restless condition of patient; refuses to speak, or cannot speak; slight rigidity about muscles of neck; deglutition difficult, and attended with a spasmodic cough, which has a stridulous sound; opens mouth with difficulty; tongue moist, with a yellowish-white coat, thin at the edges, but thick at the centre. Bowels were freely moved yesterday; severe pain, not increased by pressure, just below true ribs on left side. His wife says that he has complained, for last hour or two, of great soreness and burning in his throat. Skin dry; extremities cool, but not cold.

Being unable to get at the true history of the case at that time, it was thought that the disease might possibly be of a mimotic character. Accordingly, sinapisms were applied to the neck and feet, and an antimonial solution given: not strong enough, however, to produce emesis. Respiration soon fell to 25, and pulse to 90, in the minute. Deglutition became easy. Patient spoke, and said that he felt relieved.

Patient continued quite comfortable till half past two P. M., when I was again called. I found him suffering under severe tetanic convulsions; muscles of the neck, jaws, and throat, were rigid; mouth opened with difficulty; deglutition impossible; attempts to swallow produced convulsions, which almost threw the patient from his bed; severe pains in left side, which appeared and disappeared in paroxysms; extensors of legs, feet, and toes, contracted; muscles of arms rigid. Every three or four minutes, opisthotonos so violent that the pelvis was raised from the bed, and the body arched. Sometimes the elbows would be suddenly pushed into the bed, the pelvis raised, the head drawn back, the heels forced down, and the body supported in this position for two or three seconds. The patient would then fall back exhausted, and without full relaxation of the muscular system. The convulsions recurred about once in three minutes. Pulse 120, feeble; respiration 48, of a jerking character, each inspiration being succeeded by a sudden and broken expiration. Brows contracted; eyes fixed and staring, and corners of the mouth drawn down. The mental faculties of the patient were undisturbed. The wound upon his thumb was slightly red and swollen; a poultice, with laudanum, was applied to it, and a bottle of chloroform sent for.

Inhalation was commenced at three P. M. No inhaler was used. Chloroform was administered by means of a pledget of cotton in a handkerchief. After a few struggles, patient came fairly under its influence. The first spasm was sensibly mitigated in violence, and followed by an interval of quiet for ten minutes. At four, one hour from the commencement of inhalation, the fourth spasm occurred, which was not violent enough to raise any part of the body from the bed. Pulse, then, 88; respiration 28. It was decided in consultation to continue inhalation uninterruptedly for a considerable time.* This I was enabled to do by the assistance of several physicians, Drs. Buckingham, Andrews, Stone, Thayer, Mr. Ellis, &c.; a medical attendant was constantly in the room, who kept his finger upon the patient's pulse.

The following notes will give an idea of his condition during inhalation:—

4½ P. M. A slight jerking or twitching of the body. Muscular system fully relaxed. Limbs, when raised, fall easily back upon the bed. Head can be easily moved.

9½ P. M. Pulse 88; respiration 28, natural. Muscular system is and has continued to be fully relaxed. The pulse has not varied more than four beats from 88, nor the respiration more than two from 28. The patient has been kept in a state of incipient stertor. The pulse has been taken as a guide for increasing or diminishing the amount of vapour. Whenever the chloroform has evaporated or been removed, the pulse has risen, and upon renewing the supply, it has fallen. Patient has just vomited.

10¼ P. M. Patient has again vomited; rouses, speaks, and complains of bitter taste in his mouth; calls for water, which he drinks with ease; pulse 88; respiration 28.

March 6th. 7½ A. M. Inhalation has been continued constantly during the night. No return of spasms. Has passed water once, freely. Has drunk tea and water several times without difficulty or convulsion. Has had occasional nausea, but no emesis. Pulse has been kept within four or five beats of 70. Respiration has been 20; pulse now 68, feeble; respiration 20. Answers when addressed, and says he feels feeble. Looks around, speaks, moves limbs, and changes position naturally and without spasm. Countenance less anxious, and brow less contracted. Continue poultices to wound.

10 A. M. Still under influence of chloroform. Has drunk some tea and vomited; vomiting followed by copious perspiration; passed urine once since 7½; pulse 72, respiration 20. Begs to have inhalation stopped.

---

* Drs. Bowditch, Perry, Gay, and others, saw the patient in consultation.

1 P. M. Apparently asleep; no return of spasms; pulse 68; respiration 20; vomited once slightly since 10 A. M.; has taken wine and water and sago gruel in small quantities.

4 P. M. Inhalation has been continued *twenty-five hours,* uninterruptedly; pulse 70; respiration 20; no return of spasms; no rigidity of muscular system; no contractions excited by movement. Directed room to be kept perfectly quiet, and inhalation to be discontinued.

6 P. M. No return of convulsions; has complained of heat and pain in head, and desired to have it bathed, which was done; pulse 84, feeble; respiration 19; countenance natural; tongue cleaning at edges; deglutition easy; no stiffness about neck; has a sensation of "soreness" along back, but no pains.

8 P. M. Pulse and respiration same; is restless and uneasy; directed room to be kept dark and quiet, arrow-root and gruel to be given when thirsty, a tablespoonful of camphor water, *pro re natâ,* and every four hours a mixture of chloroform, Hoffmann's anodyne and camphor.

March 7th. 8 A. M. Vomited after first dose of mixture, and refused to take any more; got camphor water occasionally during night; except a restless hour at midnight, slept comfortably; has had one dejection, dark and very offensive; no return of spasm; pulse 72, soft and feeble; respiration 20; countenance natural; tongue cleaning; extremities warm; omit mixture, but continue camphor, and may have beef tea and arrow-root.

11½ A. M. Called to patient on account of a short, catching, and frequent cough, attended with pain at lower end of sternum; cough has a sharp and stridulous sound; thinks he feels some stiffness about neck, but says that it may be fancy; has had another dejection, dark and offensive; pulse 76, fuller than at eight; respiration 21; directed a mixture of Hoffmann's anodyne and camphor in syr. tolut. every second hour, with beef tea and arrow-root.

3½ P. M. Got mixture once and vomited it; refused to take any more; cough gone; no pains at sternum; occasional eructations; pulse 80, soft; respiration 20. Omit all medicine and continue nourishment; take beef tea, wine, and gruel.

8 P. M. Asleep; skin moist; pulse 68; respiration 20; bladder has been freely emptied during day; less restless; doing well.

March 8th. 3 A. M. Called to patient on account of severe pain along upper two-thirds of sternum; no pain elsewhere; pulse 78, soft; respiration 24 to 26; has had another copious dejection, offensive; has occasional eructations, followed by momentary relief of pain; no stiffness about neck or jaws; deglutition easy; gave some beef tea, with wine and camphor, and dose of above mixture; patient seemed somewhat relieved, and I left him, with a pulse of 78 and respiration of 20.

7 A. M. Called again; patient was easy at intervals from three to six o'clock; since six has been suffering from continued pain along length and at lower end of sternum; paroxysms of increased suffering, with contractions of the pectoral muscles, occur every three or four minutes; is supported in an upright position, cannot lie down; has an occasional stridulous cough; tone of voice altered; sensation of stiffness in the jaws; slight tenesmus, but no dejection; brows contracted and countenance anxious; patient is fearful of the result; pulse 84; respiration 44, jerking; expiration short and sudden, as if there were an obstacle to the contraction of the chest; no marked spasms or decided muscular rigidity; chloroform was again administered by inhalation.

7½ A. M. Some stertor; pulse 68; respiration 20, with full and natural movement; decubitus dorsal; muscular system relaxed; no rigidity about chest or neck; the inhalation was conducted as before, by means of a pledget of cotton in a handkerchief. Whenever the pulse rose, the chloroform was applied more closely to the nostrils; when it began to sink, more atmospheric air was admitted. The following table exhibits the condition of the pulse and respiration during the second period of inhalation:—

Hour.	Pulse.	Resp.	
8½	72	31	Is quiet; muscular system relaxed; brow uncontracted; countenance natural.
9	68	28	Chloroform freshly applied.
9½	84	36	Chloroform nearly out; is uneasy.
9¾	82	48	Chloroform freshly applied ten minutes since; slight rigidity of flexors of forearm.
10	80	44	
10¼	80	28	
10½	80	28	Slight stertor.
10¾	84	31	Slight stertor.
11	84	28	Five minutes before 11, turned over, said we could not cure him; he was in too much pain.
11¼	88	36	Drank some tea.
11½	80	24	
11¾	80	32	
12	84	34	
12¼	80	30	
12½	84	34	
12¾	88	36	
1	84	28	Asleep; chloroform removed.
1¼	84	28	
1½	96	31	Still quiet.

Directed room to be kept quiet, and wine and beef tea to be given, or broth, every hour.

3 P. M. Pulse 80; respiration 28; asleep, no return of spasms.

11 P. M. Is quite comfortable; has taken beef tea or wine every hour; no pain, no rigidity, no spasms.

March 9th. 8½ A. M. Has slept well; feels no pain, countenance natural, tongue clean; wound on thumb looks well; pulse 56; respiration 19; directed to take broth, beef tea, and wine, *pro re natâ;* no medicine.

6 P. M. Pulse 72; respiration 18; appetite good; no pain, asks to sit up.

March 10. Still convalescent.

March 11. Walks about; has eaten beef-steak.

March 12. Wound on thumb healed; discharged well.

April 4. Mr. D. L—— called at my office; has been at work; is well.

This case is interesting not only on account of the immediate alleviation of the tetanic symptoms, which followed the administration of chloroform, but also on account of the slight general disturbance which followed such a prolonged inhalation. Inhalation was continued uninterruptedly for twenty-five hours. During much of this period there was slight stertor, but not always entire unconsciousness. After an interval of forty hours, inhalation was recommenced and continued for six additional hours. No perceptible ill effects followed this prolonged inhalation.

It is worthy of remark, that in this case nothing but chloroform and nourishment was given. Neither opium, mercury, nor antimonials, were employed. The credit of the cure belongs either to chloroform, or nature. In ascribing it to the former as much as to the latter, I shall scarcely be accused of reasoning *post*, ergo *propter hoc.*

Art. IX.—*On the Influence upon Health, of the Introduction of Tea and Coffee in large proportion into the Dietary of Children and the Labouring Classes.* By Samuel Jackson, M. D., Professor of the Institutes of Medicine in the University of Pennsylvania.

Tea and coffee enter more largely into the diet of the people of this country than into that of any other. The ordinary breakfast and supper of thousands of persons in every part of the United States, are tea, coffee, and bread; while tea, bread, and potatoes, with occasionally a modicum of meat, constitute their dinner. Even children, as soon as they are able to sit at meals, are habitually placed at the family table, and allowed to partake of the same food as adults.

In the poorer classes, the evil of a common diet for all ages cannot probably be avoided. It is one of the causes productive of the greater mortality of the children of the poor. But this injurious practice, which with the poor is to be regarded as an inevitable misfortune, is followed by those who are placed in circumstances above the necessity of it. In them it is most condemnable, and can be excused only on the plea of ignorance.

The classes in which the kind of alimentation alluded to prevails, are female teachers, seamstresses, factory women, weavers, tradesmen, small retailers, clerks with families, and others living on restricted means, and very generally farmers in the country.

The inducement for its adoption is its economy, as to money, time, and fuel—a meal of coffee, or tea and bread, or the addition of potatoes, for a small family, will not cost beyond a few cents, while it requires but little fuel and a very short time for its preparation. Tea and coffee are, besides, very palatable, produce temporary exhilaration and force, and abate hunger. Coffee, as will be shown, is not devoid of some nutritive properties. Ostensibly answering, in this manner, the purposes of food, tea and coffee have, from the considerations of cheapness and convenience, become the substitutes of more substantial diet.

In this country and England, chiefly, tea and coffee are introduced into the daily meals as aliment. In China, tea is used as a refreshing and cordial beverage, presented to visitors, or drunk between meals; in the East, coffee is regarded in the same light, and employed in the same manner; on the continent of Europe, coffee is extensively used, but more as a cordial drink, or to flavour cream and milk, than as aliment.

In prosecuting this inquiry with a view to the effects on the economy, of tea and coffee, some preliminary matters require previous examination.

Every one knows that food is indispensable to life. But what is this connection between them? How is it that food is an indispensable condition of life? The solution of these questions is necessary to the understanding of the nature and objects of food, to determine the value of any alimentary articles, and to settle the pretensions of any substance for a place in the category of food.

Before examining the relation existing between food and life-action, it is important to obtain an accurate idea of what is life, or organic action. This term we limit to a single series or class of phenomena. These phenomena are the evolution or production of specific organizable matter and definite organic forms, from a primary formless organic substance. Albumen is that substance in man and the higher animals. All other phenomena are excluded. They are subordinate to, depend on, but are indispensable to maintain life-action.

Organized tissues and organs worked out by life-action, are the instruments of life. They differ widely from each other. Each has its special office. The phenomena of each are special in character and purposes. They are the same as similar phenomena in the exterior and inorganic world. They can be properly understood and studied only in their connection with those phenomena. Some are chemical, as the transformation of albumen, the processes of digestion, secretion, and the oxidation of carbon and hydrogen in the blood producing animal heat. Others are physical, as the capillarity of tissues, imbibition, endosmose, atmospheric pressure, and Graham's law of the diffusion of gases, in respiration; others are dynamic, as the excitor, motor, and other forces of the nervous system; others, again, are purely mechanical, as the actions of the muscular system.

Not one of those is properly an organic or life-phenomenon. They are indispensable to maintain the condition of the existence of life, or organic action. They are chemical, physical, dynamic, and mechanical actions, executed by organized and living apparatus and instruments, for the objects of life.

The organizable matter and organic forms are the products, and, consequently, the expression of existing forces or causes of action. Forces, matter, and form, are indissolubly connected with, and give rise to, phenomena or function; and, inversely, function and phenomena are the correlatives of force, matter, and form. Organized matter, from its nature, cannot be persistent. Under normal states, force, matter, form, and function or phenomena, are permanent; but the structural material itself is not permanent—it wastes, decays, disintegrates, and is reproduced in every act of life. Life-action is thus resolvable into two inseparable actions, or links of one action, a birth and a death, the formation and destruction of the organic material of our structure.

The supply of the primary organic substance for this incessant renewal and building up of the organized structure and maintenance of organic forms, is derived from the blood. This fluid, in its natural state, is a concentrated solution of all the solids and products of the animal economy. The amount of azotized or albuminous compound matter destroyed in twenty-four hours by life, or organic action, may be taken, on an average, at two to three ounces.* The blood would rapidly become impoverished and unfitted for life objects, unless its losses of albumen and its organic derivatives were constantly restored. The renewal of the organizable or plastic material of the blood, and its maintenance in its normal composition, for structural formation, is one of the offices of our food. Repeated analyses have demonstrated that, of the aliment that is adapted to healthy nutrition, one-eighth part only consists of albumen, or its protein compounds, or their derivative compounds; and whatever is devoid of those substances—that is, the chemical combination of carbon, hydrogen, nitrogen, and oxygen, in the proportion to constitute protein ($C_{40}H_{30}N_5O_{12}$†) or albuminous compounds—cannot perform the office of food, or be fitted for nutrition.

Another condition, not less indispensable to life-action, than organizable or plastic matter in the blood, is a definite temperature. For man and the warm blooded animals, the heat essential to healthy, vigorous life-action is 98° to 100° F. So important is heat to life, that nature has made provision for its constant disengagement in the economy. This is accomplished by the incessant oxidation of carbon and hydrogen in the blood. The temperature of this fluid is thus kept at an equable point in every part of the economy. Every organized molecule requires, for the exciting and sustaining of its life-action, the presence of plastic or organizable material, and a definite temperature.

The blood furnishes both these indispensable conditions of life-action to each living molecule.

The carbon and hydrogen oxidized in the blood, and in this manner generating animal heat, are obtained from the food. Nature has made most ample provision for the supplies of these chemical elements, by constituting them a large portion of the food of animals. Not less than from six-sevenths to seven-eighths of the alimentary substances of animals consist of non-azotized bodies. Fatty, starchy, and saccharine matters, are of this character; they are not adapted to or intended for nutrition, but solely for the purpose of calorification, by their combustion or combination with oxygen introduced into the blood by the processes of respiration. This proposition is demonstrated in the composition of the alimentary portion of milk. The casein or plastic matter for nutrition, averages 13 per cent., the calorifacient, or the cream and sugar of milk, 87 per cent.

Temperature is required not only for life-action, but also for the dynamic forces, and mechanic power and actions seated in and performed by the muscular apparatus.

---

* Dumas, Chimie Physiologique et Medical, p. 463.

† Mulder.

The identity of heat and mechanic force has been established by M. Joule.* It is expressed in the following formula: the heat required to raise one gramme (15 grains) of water one degree (cent.), is capable of raising 432 grammes (3700 grains) one metre, or 3½ feet.

According to the estimate of Dumas, the quantity of carbon consumed by a man in good health (valuing the hydrogen by an equivalent proportion of carbon), averages from seventeen to twenty-eight ounces per diem. The large amount of heat thus disengaged, is the sum of the dynamic or excito-motor force of the nervous system.

By the establishment of the above facts, we obtain precise ideas of the nature of food, its objects in the economy, and the modes of its operation. We are enabled to say with certainty what substances are or are not food; and to fix the relative value of each article of diet.

From these investigations, it is ascertained that alimentary substances form two distinct classes, differing from each other by the most striking diversities of nature, composition, and operation.

The first class are the protein or albuminous compounds. They have nearly the same chemical composition as the tissues, are isomeric with many of the immediate organizable materials of animal structure, and are exclusively destined to nutrition proper, or the reconstruction and repair of the solids.

No substance in which this especial chemical composition, protein and its compounds do not exist, can belong to this class, or can be employed in the economy for its nutrition. Some of the most eminent organic chemists and physiologists appear to suppose, that any organic nitrogenized body may answer for nutrition. This is not so. Morphia, quinia, strychnia, urea, taurine, as well as theine, and caffeine, are organic nitrogenized bodies, yet cannot be ranked as food. It is the possession of the specific combination of which protein is the base, that can alone entitle any substance to rank in this class.

The second or calorifacient class of aliment, comprehends those special chemical compounds, hydro-carbons mostly, that are capable of prompt decomposition into carbon and hydrogen in the blood. No other organic substances, though rich in carbon and hydrogen, are capable of entering into this division of aliments.

The normal substances of this kind are glucose and lactic acid, into which saccharine and amylaceous substances are converted by the process of salivary digestion; and fatty matters, modified and reduced to the finest and minutest particles possible, in the emulsion formed with them by the pancreatic and biliary secretions.

This last class is the more immediately connected with the maintenance of life. It is established by the experiment of Chossat,† that death from starvation does not occur from inanition, or the waste of the organs, but from the cooling of the blood, from the absence of the carbon and hydrogen requisite to carry on the process of combustion and the generation of caloric.

---

* Comptes Rendus, tome xxv. p. 209.

† Recherches Experimentales sur l'Inanition, Paris, 1843.

With the preceding facts ascertained, we can now proceed to investigate the claims of tea and coffee, to be regarded as properly belonging to either of the above classes of food.

Theine and caffeine, according to Liebig, are the essential elements of tea and coffee. The two are identical as to chemical equivalents. The formula for each is C_8,H_5,N_2,O_2. M. Payen, in a later and more elaborate examination, gives a somewhat different formula, but not such as to vary their properties to any extent. Liebig considers them as closely approximating to alloxan, C_8,H_4,N_2,O_1, a principle obtained from urea, by the action of concentrated nitric acid; and to taurine (C_4,H_8,NO_{10}), a principle which may be obtained from ox bile, but not from human bile.

In this view, tea and coffee must be excluded wholly from the classes of aliments, to which theine and caffeine can have no pretensions.

But M. Payen, in 1846, in a communication to the Academie des Sciences,* presented a highly laboured and accurate examination of the proximate constituents of coffee, which unquestionably brings it, at least, into the category of aliments, as it contains the constituents of both classes.

The following is his analysis of coffee :†

Cellulose - - - - - - -	34
Fat substances - - - - -	10 to 13
Glucose, dextrine, and an indeterminate vegetable acid - - - - - -	15.5
Legumin, casein (gluten) - - - -	10
Chloroginate of caffeine and potassa -	3.5 to 5
Azotized organic matter - - - -	3
Free caffeine - - - - - -	0.8
Insoluble concrete vegetable oil - - -	0.001
Fluid aromatic essence of sweet odour, and a less soluble acrid aroma - - - -	0.002
Mineral substances, potassa, lime, magnesia, phosphoric, sulphuric, silicic acids, and a trace of chlorine - - - - - -	6.697
Water - - - - - - - - -	12
	100

From this composition of coffee, it is evident the grain is endued with nutrient or plastic and calorifacient elements, and, consequently, is an aliment; yet the proportion of those elements is not sufficient to place it in a high rank in either class, or to justify the substitution of its infusion as a chief material of food, by those who are engaged in active and laborious pursuits.

---

* Comptes Rendus, tomes xxii., xxiii., 1846.

† Comptes Rendus. Tome xxiii., f. 249.

But when the quality of the weak infusion almost generally used as food, and the consequent very small proportions of the alimentary elements held in solution in it are taken into consideration, the disparity between the waste of the blood and the elements for its reparation contained in coffee, become strikingly displayed. The ordinary coffee of the laboring and industrious classes, is little more than warm water colored and aromatized by coffee. It contains but a very small portion, if any, of the nutritive and calorifacient elements. It is impossible, with such diet, to maintain in the blood the two indispensable conditions of life-action and nerve-force, organizable material and heat.

Coffee, to be prepared as food, should be first but slightly roasted, merely browned and rendered crisp, so as to be easily reduced to a coarse powder. A concentrated infusion is then to be made by the process of displacement. There should be added to it an equal, or double its quantity of cream or good milk, and be sweetened with sugar. An alimentary drink is thus prepared, possessing all the requisites of good food, with the addition of a specific excitant action on the nervous system and brain, that entitles coffee to the appellation bestowed on it by Rousseau, "boisson intellectuelle."

The ordinary miserable preparation of coffee so extensively used as food, deficient in proper alimentary principles, by taking away appetite, by distending the stomach with a warm liquid, and thus impairing its digestive power, and by its agreeable aroma corrupting the taste, rendering more nutritious food unpalatable, tends to the ultimate impoverishment of the blood. This fluid loses its proper character, that of a concentrated solution of all the organic elements and products of the economy.

As a consequence of this condition of the blood, the waste of the tissues exceeds the repair, death-action is stronger than birth-action; disintegration of structure predominates over its reformation. In time this loss of balance tells: the organs are degraded from their primitive type; their functions are impaired, and the organism descends in the scale of development. There is an approach to inferior organisms, and to cold blooded animals; or, rather, the system is kept permanently in what constitutes the cold stage, or tendency to collapse in febrile diseases.

In this state, individuals suffer from a variety of vague anomalous symptoms, characterizing no definite disease. They are always ailing, complaining, suffering, but not absolutely sick. They are miserable themselves, a plague to doctors, the prey and victims of quacks.

In this condition of the economy, the temperature is low. Dynamic force, which is identical with heat, is equally depressed; and, consequently, the mechanic or muscular power is at zero, and the offices of the economy depending on it are imperfectly performed. The circulation is feeble, digestive movements slow and defective; languor and exhaustion prevail. Exercise augments the evils by expending the forces more rapidly than produced, and the nervous functions are in a state of perturbation or depression. These disordered states are the results of a slow inanition or starvation, not suspected, because food is taken to the full repletion of the stomach; yet still it is starvation, for the blood does not possess the elements for heat and nutrition adequate to the full energy and the consumption of life-action. These cases are not remediable by medicine; they can be relieved only by a restoration of the digestive functions, and a return to a wholesome and appropriate diet.

Cases of this character have augmented in our towns and cities, and it is believed in the country, particularly amongst women, and in the industrious and labouring classes, in the last ten or fifteen years most rapidly. The neuroses, as gastralgia, different visceralgias, and other forms of neuralgia, are now quite as common amongst those classes, if not more so, than they were formerly amongst the luxurious and idle, to which they were almost exclusively confined.

A suspicion has arisen that this circumstance is to be attributed to the perversion of the use, as food, of tea and coffee, from their proper employment as nervous excitants and cordials, which are their appropriate properties. On inquiry it is almost uniformly found, at least, in the observations of many medical practitioners, that the greatest sufferers from these disordered states, are the inconsiderate consumers of tea and coffee, who substitute them largely for food.

It would extend this inquiry too far to enforce the above views by relations of specific cases. A large number could be cited as strongly illustrating their correctness.

The practice of giving tea and coffee to children at their meals cannot be too strongly reprehended and discountenanced. In the first periods of life, the most nutritive food, rich in plastic elements and capable of favoring the highest organization, is that which is required for growth and development. In the first fifteen years, nature is employed in constructing and perfecting the mechanism of life, fitting it for the conflicts, the exertions, the labours it must encounter and undergo in the struggles and difficulties of the great arena of the world, as well as with exterior malignant influences hostile to its existence, to which it is incessantly exposed. Without good materials there cannot be produced a good fabric.

Whatever tends to excite, to render irritable, or to develop unduly the cerebral structure and functions in children, is of necessity injurious. The bills of mortality show the fearful ravages in the early years of life from cerebral disease; and the foundation of most of the neurotic diseases and of ill-health in adult life, dates from the abortive efforts of nature to build up substantial organs from the paucity and poverty of the building materials, or the abnormal direction imparted to nutritive action, by over excitement, in the commencement of development.

Tea and coffee being cerebral excitants cannot act otherwise than injuriously on children, in whom there exists no object for such artificial stimulation. Indirectly, they are mischievous by taking the place of food that contains all the elements and constituents of the fluids and solids of the organs and their products. They should be abolished from the dietary of children in all well-regulated families, and by parents careful of their childrens' welfare.

The analysis of tea is not complete, like that of coffee, by M. Payen. As far as known, it contains no alimentary elements, and cannot be classed with food. It is a purely cerebral excitant.

Though the grain of coffee has amongst its constituents alimentary elements, yet in the common slovenly process of torrefaction, the calorifacient principles are destroyed; and the plastic are also more or less decomposed. But when more carefully performed, and these principles are not materially injured, still a small portion only can be dissolved in the infusion or decoction made in the ordinary mode.

The infusions of tea and coffee cannot, therefore, be used as food, and be made substitutes for nutritious aliment, without a serious detriment to the economy. They are cordial beverages, and as such are grateful and useful, especially to those engaged in mental pursuits, and who lead sedentary lives. They must, at the same time, be combined with substantial nutriment, or the blood becomes impoverished, and fails to contain the materials for organic structure, evolution of nerve-force.

In proportion to the degree of physical exertions, are the wear and tear of the solids, and the expenditure of the forces. The elements to maintain these in their normal conditions, must exist in the blood, and the blood obtains them from the aliment in which they exist, through the digestive apparatus. Tea and coffee largely drunk at their meals by those engaged in active and laborious pursuits, by excluding a due quantity of substantial food, rich in the plastic and force-producing elements, are more injurious to these classes than to the sedentary.

The inevitable consequences of this practice must be to undermine the constitution, to impair the health, to break down the forces, to cause various nervous sufferings, and finally to produce disability for labour.

Art. X.—*Surgical Cases.* By James D. Trask, M. D., Whiteplains, Westchester County, New York.

Case I.—*Erectile Tumour, Ligature of the Primitive Carotid.*—In the spring of 1847, while visiting a patient, my attention was accidentally arrested by a young woman, whose countenance presented a shocking deformity. On examination, an erectile tumour was ascertained to occupy nearly the whole of one side of the face. Her friends stated, that at birth there was a coloured spot just above the angle of the mouth, and another just below and outside the external angle of the eye of the same side, neither being larger than a small pea. These soon commenced to encroach upon the healthy portions of the cheek, until the disease, in a great measure, supplanted the original tissue.

She was about thirty years of age. The disease had not advanced for several years, and her condition was as follows. The entire right side of the face, below the eye, was enlarged; the surface of a dingy yellow, with bluish spots (her complexion being sallow), bosselated, with here and there a prominence of a deeper blue from a greater supply of blood-vessels. At two or three spots there appeared to be no other covering to the blood-vessels than smooth shining cuticle. The most curious feature, was the upper lip, the right half of which was so immensely enlarged, as to hang down and completely conceal the mouth and chin, when viewed from that side, and to project in front of the lower lip. The disease extended *just up to the mesial line* of the lip, and there suddenly stopped. The right half thus enlarged measured three and three-fourth inches in length, and two inches in thickness; it hung down like an apron over the mouth, and required to be raised with one hand, while food was introduced into the mouth by the other. The mucous membrane was beautifully mottled by the natural pink and the blue of the adventitious vessels. The whole substance of the cheek was implicated, from the cuticle to the mucous membrane lining it. The disease invaded the lower eyelid and the conjunctiva of the eye, and was bounded by the margin of the hair at the temple, by the external ear, the ramus and lower margin of the jaw and the nose, of which the right ala was dragged down out of its place. Pressure upon any portion diminished the tumour in a certain degree, but the lip could be completely emptied, after the manner of a sponge, and was then reduced to a shrivelled mass of loose tissues, ready to fill up immediately upon the relief of pressure. This she could effect by a suction of the lip against the teeth aided by the hand.

No pulsation could be detected in any part of the tumour, except that of the coronary artery, which was rather larger than in the opposite side; neither could any enlarged vessels be found at the margin running into its substance. Nor was there any whizzing or vibratory feel communicated to the finger. The size of the tumour was always increased under excitement, either mental or physical, and especially at each menstrual period. Whenever this happened there was an increase of severe pain in the cheek, apparently neuralgic, from which she was rarely free. Long-continued pressure of the tumour had nearly destroyed the natural curve of both jaws on the right side, so that, from the mesial line backward, both were flattened in their whole extent. The disease extended to the base of the alveolar ridge, but she had had two teeth extracted without any alarming hemorrhage. On two occasions there had been free hemorrhage from the cheek, which was arrested with considerable difficulty; in one caused by a prick of a needle. No attempt had ever been made to arrest the progress, or to remove this disease, and she anxiously inquired if anything could be done.

So great was the extent of the disease, that no mode of treatment gave any hope of success, while the supply of blood still continued uninterrupted. She was told that the operation of ligating the main vessel, leading to the tumour had been done, and sometimes with success; but that hers was not a favourable case, inasmuch as it appeared to be chiefly venous in its structure, and also that the operation was attended with considerable danger to life. At her earnest request I performed the operation of ligating the primitive carotid of the right side, on the 8th of April, in the presence of Dr. A. C. Post, of New York, and of several other professional friends. The sheath was opened, and the ligature placed in the artery, without exposing the vein or the descendens noni. Immediately upon tightening the ligature a strong pulsation was felt on pressing the distal portion of the artery toward the spine. When lifted up from the surrounding parts it ceased, and was due to a large artery, running directly in the course of the carotid and behind it. In the evening she was excited and restless, and complained of violent throbbing at the point where the ligature was applied, and of pain about the top of the head. There was a good deal of nervous excitement, and she was light-headed; saw horses, &c.; pulse 84, soft and natural. Ordered pills of hyoscyamus and assafœtida.

April 9th. Passed a comfortable night; had considerable thirst, and pulse rose to 105 in the evening.

10*th.* Was rather restless and somewhat delirious, expression of countenance, ill tempered; complained a good deal of difficulty of swallowing. Her courses, which had appeared on the 5th and disappeared before the operation, reappeared; tumour became larger than usual.

12*th.* My friend Dr. Brown detected retrograde pulsations in the right temporal artery; still suffered from menorrhagia, for which she had been taking acet. plumbi and opium.

14*th.* For two or three days memory had been impaired; forgot when the operation was done, and when her friends called to see her; had some pain about the temples; tumour painful to the touch, and colder than the rest of the face; but not more sensitive or cold, than often before the operation.

17*th.* Still sees bugs, &c., when she looks steadily. Pulsation felt to within an inch of the ligature.

The wound was not entirely healed for a month, at the expiration of which time, all evidence of cerebral disturbance disappeared, and memory was restored. The ligature came away on the sixteenth day; no part of the wound healed by the first intention.

At times she fancied the tumour diminished in size, but it soon became evident that no permanent change had taken place. Her health was so delicate as to forbid any farther proceedings at that time.

June 4th. With the assistance of my friends Drs. Brown and Ayres, I passed thirty needles, heated to a red heat, through the substance of the left half of the diseased portion of the lip; thrusting them in various directions, so as to excite inflammation in the whole of that part. Considerable hemorrhage followed one or two of the punctures, which required nit. arg. to suppress it. A lead plate was then applied, which had been previously prepared, by cutting it from a piece of sheet lead, of such a shape, that, when turned over upon itself, it could be exactly applied to the upper and under sides of the lip, so that, when squeezed between the thumb and finger, it compressed the lip thus embraced. It was covered with cotton flannel, on both sides, and suspended by strings attached at either end, tied over the top of the head. Scarce any inconvenience was experienced from the lip, and no febrile excitement.

6*th.* The lip being rather painful, the lead was taken off, and the lip immediately filled up, and recovered its original size; the sloughs were separating from the needle-holes. The lead was reapplied; she had nervous chills afterward.

7*th.* The lead plate was replaced by one of thin tinned iron, which was lighter; the lip filled up as before; it felt harder, and could not be compressed to the same degree as before.

9*th.* Had considerable pain in the lip, and headache; was thirsty; the pulse fuller; courses had come on the preceding night; was very nervous; but little pain in the lip; had had no alv. deject. for two days; all the disturbance ceased after the operation of a laxative. The tin clamp was removed, as the wounds were nearly healed. Some indurated spots could be felt for some time afterward, which were subsequently absorbed, and the lip remained as it was before the ligature of the artery. My removal from Brooklyn prevented any farther attempts to relieve her.

The above was a case of erectile tumour of unusual extent, and involved important parts. In structure it was evidently chiefly venous. There was an absence of pulsation and vibratory thrill, both in the substance of the tumour and at its circumference, which is perceived when the arterial vessels form a prominent part of the diseased structure. The coronary artery was enlarged, but its pulsations were communicated to none of its subdivisions, neither could any enlarged veins be traced from it.

The cure of the disease was desirable, not only from the deformity, which unfitted her for society, and its extreme inconvenience, but from the risk of severe hemorrhage from accidental injuries, as well as ulceration of the surface lying in contact with the teeth. In considering the possibility of affording relief, three prominent plans suggested themselves; first, removal of the diseased mass by excision or ligature, second, the induction of adhesive inflammation, by setons, needles, &c., and third, ligating the principal vessels leading to the parts. The first appeared to be out of the question, from the impossibility of removing a large portion of the disease without destroying the side of the face; and though the enlarged lip could have been removed, dangerous constitutional irritation was apprehended from the ligature, and uncontrollable hemorrhage from the knife. The fact of the size of the tumour being affected very materially by the state of the circulation, was the principal reason for rejecting the second, and resorting to the third mode. And yet the experience of others afforded but little encouragement for the trial of the ligature of the principal arterial trunk. Ligature of the carotid failing to effect anything, it was resolved to make trial of heated needles, and thirty were introduced.

It had occurred to me, that if by any means compression could be made, upon the part operated upon, sufficient to keep out of it the adventitious blood contained in the cells, and which is to be regarded as accidental, and at the same time allow the entrance of a sufficient quantity to support the vitality of the parts, something important would be gained. The blood contained in the cells coagulates on the introduction of the heated needles, and then becomes a foreign body, which must subsequently be removed by absorption; its presence sometimes producing excessive inflammation, ending in sloughing, with no little risk to the patient. But if the cells should be first emptied of blood, on the effusion of lymph, their parietes would become agglutinated; and, the pressure being removed, the tumour remain shrivelled, the cellular structure having been destroyed; there still being a sufficient supply of blood to subserve the purposes of nutrition. If I am not mistaken, this combination of compression and the use of the needles, may be rendered available in the treatment of many cases of this disease. In the one above related, the needles failed to kindle the desired amount of inflammation, but, so far as it goes, that trial would encourage a similar resort to the co-employment of compression.

Of course, various contrivances will be required, according to the situation of the tumour. The one adopted in our case was suggested by my friend Dr. W. K. Brown, of Brooklyn, and was completely adapted to it, and most perfectly simple. In other situations I should be disposed to try an application of compressed sponge, as recommended by Dr. J. K. Batchelder, of New York. A piece adapted to the figure of the part is closely bound on by adhesive strap or bandage, and afterward moistened, the enlargement of the sponge producing an equable pressure.

Case II.—*Strangulated Inguinal Hernia—Operation; the patient being under the influence of Chloroform.—July 8th*, 1848, at 11 A. M., was called to P. M. and found him lying on his side, with the knees drawn up, complaining of great distress in the abdomen. His story was, that some two hours before, while running fast in the field, in pursuit of a bull, he fell over a little hillock with great violence, and struck his abdomen, at the same time bruising his right testis; that he fainted and vomited, crawled on his hands and knees to the house, a distance of several rods, and dropped on the floor.

There was great tenderness of the whole abdomen, especially in the right iliac and the hypochondriac regions. There was no complaint when the testis was handled, and there was no tumour in the scrotum. There was frequent vomiting, the surface of the body cold, and he was scarce able to whisper. Having apparently suffered severe concussion or other injury of the abdominal viscera, hot fomentations to the belly, heat to the extremities, and hot drinks, were ordered. By 6 P. M. there was considerable reaction, and the pulse about 90 and full, great distress in the abdomen on attempting to move, and great tenderness. Venesection was practiced, to approaching syncope, say ℥x; gave calomel gr. x, and opium gr. ij.

9*th*. 8 A. M. Felt better for the bleeding; tenderness and vomiting had continued. He now called my attention to a hernia in the right side of the scrotum, of the size of a hen's egg, which he had observed for the first time during the night. He stated, however, that he had had a hernia for fifteen years, which came down but occasionally, only after unusual exertion, and had always been easy of reduction; and that it had not been down for several weeks before. Taxis was employed for over half an hour, and he was then bled to syncope; after which the bowel was easily returned on renewal of the taxis. The tumour was not tender, but there was exquisite sensitiveness about the internal ring. A firm, hard substance, of the size of the little finger, could be traced from the external ring, for an inch and a half, down into the scrotum, where it expanded and appeared to be in close contact with the testis, and was presumed to be a diseased spermatic cord. Pulse soft, and about 100. Ordered a purgative enema, having given a grain of opium.

7 P. M. Bowels moved slightly after the enema; vomited after drinking. Felt better after the reduction, but the hernia had come down, of about half its former size. Tried taxis for fifteen minutes without success; pulse very compressible; urgent thirst; great restlessness. Ordered cal. gr. ij, morph. ¼ gr. every three hours, to combat peritonitis, continued hot fomentations, ice *ad libitum*.

9*th*. 10 A. M. Slept some; was free from the anxious distress of the preceding day, and spoke louder; still vomited everything; tried taxis for a half hour; no tenderness of tumour; bled him to syncope; pulse 76, rather hard; before bleeding, was softer; taxis tried again, but no impression on the hernial tumour, which had resumed its original size, and was so tense as to be perfectly unyielding to pressure between the thumb and fingers, but not tender. Spoke to him of the operation. 4 P. M. Bilious vomiting; tumour somewhat tender on pressure, which caused acute pain about the umbilicus. Ordered pounded ice to the tumour. 10 P. M. He had got up and walked into another room, and felt better. Ice applied for four hours, but produced great pain in the abdomen; pulse 76, soft and perfectly compressible; was so much under the influence of morphine as to be constantly disposed to sleep.

10*th.* 7 A. M. Had an uncomfortable night; ice was reapplied, but caused sharp pain in the bowels, relieved only by hot fomentations; had just had a spontaneous evacuation of the bowels, and felt easier; pulse 76, not quite so soft. 12 M. Had had another evacuation, described as watery, with some blood; anxiety, tenderness, and distress increased. 3 P. M. Had had another dejection, and spoke up brighter, said he felt better; pulse 76, of natural force; tongue had a pretty thick covering of fur; vomiting at intervals, unaffected by opiates in any form. Calomel and opium had been continued, to combat the peritonitis which unquestionably existed, and the operation deferred from a great uncertainty felt as to whether there was actual strangulation, or mere peritonitis with inflammation of the neck of the sac. Was prevented from seeing him until 9 P. M. He had apparently begun to fail. The alvine discharges had not been preserved for inspection, as had been directed, and it was impossible to form an opinion whether they came from above the protruded gut or not. No diminution of tenderness or tenseness of the abdomen or of the tumour had followed their dejection, but on the whole he had failed more rapidly since they appeared. Pulse 100, and small; anxiety, distress, and tenderness, increased; preparations were now made for the operation. In an hour afterwards, pulse 110, and feeble, vomited green bilious matter; had had eructations for the preceding twenty-four hours, but no hiccup; abdomen resonant as a drum.

Drs. Palmer and Hodgson, of this village, kindly assisted me in the operation. From the history of the case, no unusual increase of the thickness of the sac could be expected. The hardness of the tumour, however, was remarkable: it yielded not in the slightest degree to pressure, and felt like a scirrhous testis; it was resonant on percussion. The patient, though anxious for the performance of the operation, was resolutely determined not to submit to it, unless allowed to inhale chloroform. From twenty to thirty minutes elapsed before he was insensible to the prick of a pin. An incision was made from over the internal ring to near the fundus of the tumour, through the integuments. After passing through what was considered to be the intercolumnar fascia, the loose straggling fibres of the cremaster muscle, and a layer of firm fascia, a thin membrane was exposed. This, when lifted up by the forceps, was snipped by the knife. About a drachm of clear serum escaped; the sac was divided on a director up to the external ring, and afterwards above it. The finger could be passed in every direction excepting beyond the sides of the tumour, which lay in the sac, or rather behind it, after the manner of the testis in the tunica vaginalis. After deliberate examination, it was concluded that this was a false sac, and that we had yet to deal with an old and very thick sac enveloping the gut. No impression could be made on the tumour by pressure, and on following up the neck, which was an inch long and about the size of the little finger, it was found of the same hardness quite up into the inguinal canal. Selecting a spot at the left side of the tumour, where the external layer happened to be loose enough to pinch up, the dissection was continued. Layer after layer was divided until the knife caused a hollow sound, indicating that we were approaching the gut.

Before this time the patient was repeatedly in a state approaching collapse; and it had been necessary to pause often, to enable him to rally: at one time, indeed, he appeared *in articulo mortis.* No stricture could be felt at either ring, external to the sac. To undertake to lay open the neck was out of the question, from its great thickness and the density of its tissues. The dissection was therefore continued, and we were evidently approaching the bowel, but the hemorrhage now became embarrassing; the walls of the incision had almost the firmness of cartilage, and presented a deep channel, constantly filled with blood, at the bottom of which, through dense, compact layers of condensed cellular tissue, the dissection was to be carried on by candle light. The operation was continually interrupted by the sinking of the patient, accompanied by involuntary discharges of urine and feces, spasmodic twitchings of the muscles of the face, imperceptible respiration and frequent pulse, and the stomach rejecting everything that was poured into the mouth. His condition was so alarming as to cause apprehensions that he would die on the table, and, despairing of being able to distinguish the surface of the gut when it might be reached, a needle was passed into it for the purpose of relieving the distension. The point of the scalpel was afterwards introduced, and air, with a small quantity of dark offensive fluid, escaped. The wound was hastily closed, and the patient put upon the bed, to die, as was supposed, in a very little time.

Saw him four hours after the operation, and he expressed himself relieved. Bowels had moved; *tenderness of the abdomen much diminished;* put him on calomel gr. ij; morphine ¼ gr. every three hours.

Next day 12*th*, 9 A. M. *Tenderness of the abdomen gone;* discharge from the wound very little but very offensive, and probably fecal; was feeble. Ordered brandy, one teaspoonful every hour, quinine gr. i, with morphine every two hours. 8 P. M. Has had several dejections; pulse 120, feeble and small; frequent vomiting. Ordered to give pil. opii gr. iss, every two hours: omit calomel and increase the brandy; sinapisms to abdomen.

13*th.* Had profuse, constant, involuntary diarrhœa; pulse 120, and very small. Ordered brandy, ad libitum; laudanum and tannic starch injections. In the evening the discharge was checked.

14*th.* 9 A. M. Passed a comfortable night; had been shaved, looked bright, and spoke up distinctly; pulse 108, soft, small, but regular; wound looked disposed to suppurate. Ordered one grain of quinine every three hours. 10 P. M. Was bright until 4 P. M., then became faint, and was supposed to be dying; diarrhœa returned, but was kept in subjection by opiate enemata; vomiting continued, resisting a blister to the epigastrium, doses of morphine, pills of opium and ice. He now began to complain of all stimulants as burning his stomach. He became daily more and more feeble, the same symptoms continuing. *No pain* or *tenderness* on *pressure* was experienced after twenty or twenty-four hours following the operation, until his death, which took place July 17th, at 10 A. M., seven days after the operation.

Autopsy, 24 *hours after death.* Wound in a sloughy and exceedingly offensive state, and no attempt at union. On opening the peritoneal cavity, the peritoneum was found thickened, the intestines glued to each other and to the peritoneum all around the internal ring. These adhesions could be easily broken up, but they had prevented effusion of feces into the peritoneal cavity. There were several depots of pus between the convolutions of the intestines and the walls of the abdomen, one of which contained a teacupful. Viewed from the abdomen, the mouth of the sac presented a puckered appearance, like that of the neck of a purse tight drawn. The neck of the sac still felt like a hard cord, of the size of the little finger, and the passage through it barely admitted a middle-sized silver probe. On laying it open, a considerable quantity of firm lymph was discovered, lining the neck and body of the sac, which had caused this partial obliteration of its calibre, and which could be readily stripped off. Its entire thickness was about a half inch.

The gut, a portion of the ileum, had entirely retreated from the sac, into the peritoneal cavity, and had formed adhesions about the mouth of the sac. The opening which had been made during the operation, was half an inch in length, and the edges had become rounded off, without any attempt at adhesion. In a nearly circular space around the incision, involving from one-half to two-thirds the circumference of the intestine, it was of a dark purple colour, and its mucous membrane a little softened. (?) This appeared to be the portion that had descended; so that the entire calibre of the bowel had not been involved in the hernial protrusion.

This case presents several points of considerable interest. The protrusion at the time of the accident was evidently incomplete, and the intestine came down so as to fill the sac only after several hours, during which there was frequent vomiting. After its apparent reduction on the second day, it descended again within six hours; partial relief to the symptoms followed, but it is now highly probable that the reduction was incomplete, a portion still remaining in the inguinal canal, though the frequent vomiting might have caused a reprotrusion, had it been entirely returned. It became a question whether strangulation had really existed, or whether the symptoms were due to inflammation of the peritoneum and neck of the hernial sac. There had been from the first great distress and tenderness on pressure quite generally in the abdomen. He had expressed himself somewhat relieved by the apparent reduction, but not more so than after the previous venesection of the preceding evening, and the vomiting and tenderness continued. I put him on a course calculated to combat peritonitis, and determined to wait a little before proceeding more actively. The operation was at length resorted to, after trial of all other means that promised any thing. There had been three pretty free alvine evacuations, but they had afforded no relief, on the contrary, he appeared to fail after the first. Their character was unknown, as they were not preserved as directed; one, passed just before the operation, certainly had the appearance of having come from the small intestines. The post-mortem examination showed that strangulation had actually existed, by the presence of the darkened spot above described, which, according to Mr. Teale, p. 62,* has been known to continue fifteen or twenty days after an operation.

Whether the stricture was owing in this case to diminished calibre of the neck of the sac from effusion of lymph on its internal surface, subsequent to the protrusion of the intestine, or whether it depended on the great distension of the gut with air, I am not convinced. The tumour, it will be remembered, was pyriform in shape, with a long, narrow, undilatable neck, which, on post-mortem examination, was found lined with lymph, so that it would not allow the passage of more than a silver probe, and which, when freed from lymph, would not more than admit a small goose-quill; and this lymph, or a portion, might have been effused after the descent of the intestine, and caused strangulation. On the other hand, "a sudden irruption of a fresh portion of intestine, or the *generation of gas* in the portion already protruded, may induce complete strangulation," says Mr. Teale, p. 54. On the puncture of the intestine in the operation, air escaped, and the tumour became sensibly softened. Puncture of the intestine was our only resource, from the impossibility of pursuing the operation any farther, and the patient was thus afforded a chance for an artificial anus; moreover, in case the strangulation depended on distension, it afforded a hope of relief. In those embarrassing cases in which, after removal of the stricture, the contents of the bowels cannot be returned by reason of great distension, "the over-filled intestine has been punctured with a large needle (Lowe), with a lancet (Loëffler), and with the trochar (Richerand, Jonas, Von Graëfe); the latter was successful." (*Chelius, Syst. of Surg.*, vol. ii. p. 39.) This practice, in the class of cases described, as well as when great protrusion of the intestines through wounds in the parietes of the abdomen takes place, is one from which the best-informed surgeons now most generally dissent, but in our case delay was out of the question.

---

* Practical Treatise.

Nothing could be elicited from the patient which threw any light upon the origin of the false sac found in front of the true sac. M. Cloquet has explained the formation of similar protrusions of the peritoneum, of which the mode is described by Mr. Teale, p. 18, as follows: "When the entrance of the viscera into the sac is prevented, its neck has a remarkable tendency to contract, and, as it diminishes in size, it becomes more loosely attached to the hernial aperture. This contraction may proceed to such a degree as to produce actual closure of the mouth of the sac. A serous bag then remains closed like the tunica vaginalis from the general cavity of the peritoneum. By the side of this closed cyst, a fresh portion of peritoneum may afterwards be protruded through the same hernial aperture, so as to form a new sac in close contiguity with the old one." In our case the neck of the false sac ran up into the inguinal canal, but owing to the great haste in which the examination was necessarily conducted, no marks of obliteration of its mouth were looked for on the peritoneal surface. Its existence is the more remarkable, from the fact of his never having worn a truss. It must have been formed years before, since the true sac had evidently existed a long time.

The thickness of the sac must be regarded as extraordinary. Though not ascertained by direct measurement, it was but little if any, less than half an inch. Though we are told that the sac is sometimes found much thickened, Teale and Lawrence each refer only to the case of Arnaud, in which the sac was six lines in thickness, and Velpeau to the additional one of Graëfe, in which the sac was of similar thickness. It appears, however, that the various parts of the sac sometimes "undergo fibrous, fibro-cartilaginous, cartilaginous, or osseous changes of structure, either from inflammation, or from changes in the nutrition in the part consequent on pressure," &c. This man repeatedly declared that the intestine did not ordinarily come down oftener than once in five or six weeks, and that it had never been down more than two or three days at a time. If this were true, the changes in the sac must have taken place independent of the presence of the intestine distending it.

Lastly, I am inclined to attribute the very unusual depression under which the patient suffered during a part of the operation, and which imposed the necessity of hastening it to a termination, to the influence of the chloroform which had been administered. From four to six drachms were made use of, while getting him under its influence, and during the time he was allowed to breathe it, after the operation commenced. The false sac was reached with facility, and having been opened, and the true state of things not being at once recognized, the inhalation of the chloroform was suspended. Almost immediately after the return of sensibility, the alarming prostration presented itself, and it continued alternating with intervals of reaction, during which alone any advance in the operation was made, the patient struggling violently, until the completion of the operation in the manner narrated. The patient's condition when placed upon the table, was considered by us all, as very fair; and the shock to the system from the operation, up to the time when the prostration first manifested itself, was entirely inadequate to the production of any such effects. It was with great difficulty that he had been brought under the influence of the chloroform—more than in any of the numerous instances in which I have witnessed its administration.

CASE III.—*Suppuration beneath the palmar fascia—hemorrhage from incision—subsequent ligature of the brachial artery. Sept.* 1847.—J. B., æt. 9 years, applied at the Brooklyn Dispensary. Some four days previous, on climbing a fence, a sharp iron nail entered the palm of his hand, and he hung by it until taken down by a passer by. Intense pain came on and had continued unabated. There were no positive indications that suppuration had taken place, and nothing but the duration of severe inflammation to lead to the presumption of its having occurred.

The boy was placed under the influence of ether, by causing him to inhale it from a phial by the nose, one nostril being closed by the finger, and the mouth shut. A free incision was cautiously made into the palm of the hand, in such a direction as to avoid the usual course of the superficial palmar arch. On dividing the palmar fascia, about a teaspoonful of pus escaped, and pretty free hemorrhage came on. This was readily controlled by a compress over the radial and ulnar artery, confined moderately tight with a roller. He was put in bed with the arm on a pillow and the wrist placed higher than the elbow, and a bread and milk poultice applied to the palm. The relief was immediate and very great; pain and swelling left the arm and hand, excepting the index finger, and the incision nearly healed by the first intention. Ten days after the incision was made, I was hastily summoned, and learned that, while dancing about the floor, he had accidentally struck a severe blow with his hand, and that he had lost two or three ounces of blood. Compression of the brachial artery with compress and roller controlled the hemorrhage, but obstructed the venous circulation. Compresses were firmly applied over the radial and ulnar; ice was applied to the wound, but he would not tolerate direct compression upon it. In the morning there was a false aneurism, of the size of a bullet. A sixpence was enveloped in linen and applied directly over the sac, and over this a graduated compress retained by a bandage. Next morning, Oct. 1st, found he had passed a bad night, and he complained much of his hand. There was an offensive gangrenous smell, and on making moderate pressure and relaxing it, a large jet of arterial blood escaped. Compression in the palm gave him so much distress that he could not bear it. A compress was applied over the brachial artery, a thin strip of wood upon this, and a corresponding strip on the opposite side of the limb, and then a *presse artere* of a C shape embracing both. After repeated trials, it was found impossible to prevent the artery from slipping from under the pressure, any movement of the limb at once disturbing the instrument. The boy was of an exceedingly wayward disposition and could not be controlled but by main force. A cylindrical compress was then placed in the course of the radial artery, and another in the course of the ulnar, and across the two the thin strip of wood above spoken of, with its long diameter across the wrist. A corresponding one was placed on the back of the wrist, and the two bound together by the *presse artere.* This controlled the hemorrhage completely. In about a half hour the wrist became very painful, in an hour and a half the pain was insupportable. When pressure was a little relaxed by means of the screw, hemorrhage returned. He had now lost a good deal of blood.

Placing the boy in the lap of an assistant, I proceeded to put a ligature on the brachial artery. He begged permission to "snuff" the ether; the phial was handed him, and in less than a minute he was completely under its influence. He continued to inhale it, for four or five minutes, until the operation was completed. The first incision passing through the integuments and superficial fascia, some loose cellular tissue was divided by the scalpel, and the basilic vein came into view: this was drawn to the inside. On dividing the deep fascia, the medium nerve was drawn to the inner side. The sheath being exposed, a strip of the artery came into view, which was, in a large measure, hidden from view by the distended venæ comites, lying parallel to it on either side. A bent-eyed probe was passed under the vessel, conveying a ligature which was tied.

There was perfect union by first intention, excepting at the point where the ligature hung out. The ligature came away on the twentieth day, and in seven days more he was completely cured.

The mode of inhalation practiced in this case is one which I described in the *New York Annalist,* soon after the introduction of etherization. It has for its recommendation, economy, and the most complete simplicity. Should it be desirable to bring the patient suddenly under the influence of chloroform or ether, it would probably be found in some cases that sufficient vapour would not be furnished in a given time. But this is not considered desirable by some who have had great experience. (See a Review of Dr. Channing's work in the January Number of this Journal.) Whenever there is no reason to anticipate any particular insusceptibility, I can confidently recommend its trial. A small phial should be half filled with ether or chloroform, and held to one nostril, the other being closed by a finger, and the mouth shut. Several deep inspirations should then be taken, as in snuffing heartily from a smelling-bottle.

CASE IV.—*Case of Dislocation of the Metacarpal bone of the Thumb.*—M. B., a tailor, accidentally fell down stairs, and in attempting to save himself, the weight of his body came (as he thinks) upon the extended thumb of his right hand. Considerable pain and swelling ensued, and the mobility of the thumb, though not lost, was much restrained. He presented himself two days after the accident. There was a projection under the skin, which could be easily pushed into its place, but immediately returned. It gave at first the idea of a dislocation of the trapezium, and had actually been taken for it by an intelligent friend, but its true nature was sufficiently apparent. In the course of five or six days, as many different kinds of splints and bandages were resorted to, to no purpose. A very small amount of force applied directly to the head of the bone sufficed to keep it in its place, but when sought to be effected through the aid of bandages and splints, unless applied so tight that he could not bear them, the head slipped out, the capsular ligament being torn. I had a clamp made of a piece of steel, a half an inch wide and one eighth thick and six inches long, bent into the shape of the letter U, with a screw passing through one end, perpendicularly to the surface. A compress was placed over the head of the bone, and one on the palmar aspect of the articulation, and a very moderate pressure from the instrument kept the bone in its place, and effected a perfect cure.

ART. XI.—*On the Action of Poisons.* By JAMES BLAKE, M. D., F. R. C. S. E., Professor of Anatomy at the St Louis University.

THE subject of the action of poisons, has attracted the attention of physiologists since this branch of science first began to be cultivated; and undoubtedly the remarkable effects which many of the more venomous substances produce on the living organism, are well calculated to excite the attention, both of the philosophical inquirer and of the lover of the marvellous. It is not, however, until within the last few years, that any well-devised experiments have been performed with this class of substances, so as to make them available in illustrating some of the phenomena of living beings. The researches of Fontana, Brodie, Orfila, Magendie, and Christison, have undoubtedly furnished us with many interesting facts on the action of poisons; and if, after all the labour that has been bestowed on it by these able experimenters, some of the more simple and fundamental problems connected with it have not yet received their solution, this dearth of useful results is not due so much to a want of care or accuracy, on the part of those who have instituted these researches, as to our ignorance respecting some of the fundamental problems of general physiology,—the solution of which would alone afford the necessary data for determining the most important questions relating to the action of poisons.

One of the fundamental points connected with this subject, and one which has attracted the greatest attention, is, as to the manner in which the more rapidly fatal poisons produce death: whether they must necessarily be absorbed and carried into the blood, before they can give rise to any general effects; or these effects may be the result of an action they exert on the nerves of the part to which they are directly applied, and which may therefore occur independently of their being absorbed? It is on this point that physiologists have differed; and most of the experiments that have been performed on the subject, during the last twenty-five years, have been instituted principally with a view of determining this question. Yet simple as the nature of the problem might appear, and notwithstanding all the attention that has been given to it, as yet, no decisive evidence has been brought to bear on the subject, or such, as in the opinion of most physiologists, is capable of definitely deciding the question. Some experiments which were performed a few years since, and were published in the *Ed. Med. and Surg. Journ.*, would I had hoped have been sufficiently conclusive to have decided the controversy. But as the conclusions which these experiments led me to have been called into question by Dr. Christison, in the last edition of his work on poisons, and also by Mr. Taylor, I propose to take a short review of the facts which have been published in my two former memoirs on this subject, and also to relate some recent experiments that have been performed, in the hope that the observations I have now to bring forward will be considered sufficiently conclusive to decide this long disputed question.

As to the great importance of our arriving at some definite and just conclusion on this point, there can be no doubt, when we consider how important, in the hands of the physiologist, is the class of substances whose action we are investigating. They are to him, in fact, what to the chemist are his reagents: the substances by means of which he introduces certain modifications in the living organism, in a manner analogous to that in which the chemist modifies the composition and properties of unorganized compounds by the various reagents he employs. It would be well, whilst employing the term poison, to remember its close analogy with that of reagent; the only difference being, that the latter term is applied more particularly to those compounds which are most used to determine changes or reactions in dead matter; whilst the term poison, applies to those bodies which we employ to determine reactions in living beings. An investigation, therefore, of the action of poisons, involves one of the most interesting subjects of research to the scientific physiologist; nor should these researches be confined to animals alone: the great service that has been rendered to morphological physiology, by a comparative study of form in the whole series of living beings, will be afforded likewise to physiological chemistry, by as extended a series of observations, performed with our physiological reagents or poisons.

The answer to the question, as to the manner in which poisons act, might, at first sight, be supposed to involve the whole of the phenomena connected with the changes they produce in living bodies; but such is not the meaning generally attached to it; and we could not be furnished with a more striking proof of the rudimentary state of physiology, than is afforded by the restricted sense in which this question is used. Far from being able to enter into the investigation of the molecular reactions on which the effects of poisons depend, we are obliged to confine ourselves to the determination of the most simple and most mechanical problems connected with their action; and although volumes have been published on the subject, and whole hecatombs of animals have been sacrificed, yet physiologists are yet undecided as to whether a poison must necessarily be absorbed before it produces any general effects. This question is evidently one of the most simple, and at the same time the most fundamental, of any connected with the action of poisons: it does not involve a knowledge of the chemical properties of the solids or fluids of the body; it does not even demand that we should be acquainted with the chemical composition of the poison we employ; we have not even to analyze the tissues on which we suspect the poison acts, for even its detection in these tissues would not throw any light on the subject. The research appears, indeed, to be one surrounded with but little difficulty, and yet, how much labour has been spent on it, without arriving at any satisfactory result.

It will be well, before proceeding farther, to endeavour to trace out the causes that have led to this want of success on apparently so simple a subject. There are, undoubtedly, many who will attribute it to the uncertainty which they suppose to be necessarily inherent to all experimental researches on animals; and who will thus endeavour to support that opinion which would deprive us, in elucidating the most complicated phenomena of matter, of that powerful lever of research, which has been so successfully used in almost every other branch of science. It may be well, indeed, for the speculator on physiological phenomena, to repudiate a method of research which involves a great deal of disagreeable labour, and the sacrifice of much time, but it must eventually be discovered that the most important advances in physiology will be attained by means of experimental investigation. If the experimental researches on the action of poisons have not led to any definite results, it is not owing to any fault inherent to the method itself, but on account of this method not having been followed out, in accordance with those rules by which every scientific inquiry should be conducted.

In order to arrive at any satisfactory result in an experimental investigation on the absorption or non-absorption of poisons, there was but one physiological fact which required to be known previously to entering on such an investigation, as it involves data which are indispensable in determining the question; this was, the time required for a poison to be conveyed by the blood from one part of the system to another; yet, all the earlier experiments on the action of poisons, were undertaken without any correct data on this point, and, in fact, under the influence of most erroneous ideas on the subject; and it is not until within the last few years that the experiments of Hering and myself, have afforded more correct data on the time occupied by the blood in circulating through the system.

It seems really surprising, that the manifest contradictions furnished by these experiments on poisons, did not lead to the suspicion that the data on which their action was explained must be wrong. For, on the one hand, it was found that poisons would give rise to symptoms of their action, and in fact destroy life, in a much shorter time than was believed necessary for them to be absorbed and carried by the blood over the system; *ergo*, they must act by impressions conveyed through the nerves. But, on the other hand, it was ascertained that a poison applied to a large surface, abundantly supplied with nerves, did not produce any general effects as long as it was prevented from mixing with the blood; *ergo*, they would not act by impressions conveyed through the nerves. Such an evident contradiction in the conclusions derived from these experiments, instead of leading to any doubt as to the correctness of the data on which they were founded, merely served to give rise to a new theory, which endeavoured to conciliate these opposing facts by introducing fresh errors into the investigation. I allude to the theory of Messrs. Addison and Morgan, which served to propitiate the believers in absorption, by finding that it was necessary that a poison should enter the blood-vessels before it could act, but that, when there, its farther effects were in accordance with the rules of sympathy, or owing to an impression conveyed through the nerves distributed on the inside of these vessels. This bastard theory on the action of poisons was that which, at the time I commenced my investigations on this subject, was most generally admitted; but as it was soon proved that every fact brought forward in support of it was erroneous, opinion at present seems to be again falling back on the old explanation, viz., that some poisons act by an impression they produce on the nerves of the part to which they are directly applied, whilst others produce their effects only when absorbed.

The experiments I have performed on this subject, have furnished me with a mass of evidence which, without a single exception, leads to the conclusion that the absorption of a poison must take place before it can give rise to any general effects. After having ascertained the correctness of the views of Hering in regard to the circulation, and having extended these researches, so as to ascertain the time required for the blood to circulate from one part of the system to another, in different species of animals, I was furnished with the necessary data for entering on the investigation of the action of poisons.

My researches on the circulation had proved, that the time required for the blood to pass from the jugular vein, and to be circulated through the body was, in the horse sixteen seconds, in the dog twelve seconds, in the fowl six seconds, and in the rabbit four seconds; and it now only remained to be seen if a poison, introduced into the veins, would give rise to any symptoms of its action, in a shorter time than these facts showed was required for it to be circulated through the system. Should such be the case, then, it was evident that the effects of the poison *must be* the result of an action on the nervous centres, propagated through some other channel than that of the circulation. If, on the other hand, it was found, that between the time of the introduction of the poison into the veins, and the appearance of the first symptoms of its action, a sufficient interval always elapsed for it to be diffused over the system through the medium of the blood, which interval would vary in different animals according to the greater or less rapidity of the circulation, we then have conclusive evidence that it is by being absorbed and conveyed to the nervous centres that these poisons act.* A carefully conducted series of experiments, in which all the more rapidly fatal poisons were used, proved that in no instance did these substances show any symptoms of their action in a shorter space of time than that which would suffice for their general distribution through the system; it was found that when large doses of the most rapidly fatal poisons were introduced into the veins, they did not, in the horse, give rise to any symptoms of their action in less than sixteen seconds, in the dog, in less than twelve seconds, in the fowl, in less than six and a half seconds, and in the rabbit, in less than four and a half seconds.

These facts furnish us with a twofold proof as to the actions of poisons. In the first place, they show the improbability of their acting through the medium of impressions made on the nerves, by showing that they require a much longer time to act in some animals than in others; whereas, we cannot suppose that a nervous impression is much longer in reaching the sensorium in a horse, than in a rabbit. They also show that at the moment that the action of the poison on the nervous centres first shows itself, it has already been conveyed to these organs by the blood, so that there is no occasion to invoke the doctrine of sympathy to explain its action. The deductions arrived at by these facts are much strengthened when it is shown by experiments, from which I endeavoured to exclude every source of fallacy, that poisons will not act when applied to a part, the connections of which with the central parts of the nervous system are unimpaired, provided they are prevented from entering the general circulation. For the details of these experiments, I must refer to the *Edin. Med. and Surg. Journ.*, vol. liii. p. 55.

I shall now proceed to offer some remarks on the criticism which both Dr. Christison and Mr. Taylor have made on my experiments, in the last edition of their treatises on poisons. In the first place, they state, that my aim in performing these experiments was to support a preconceived theory, rather than to elucidate the truth; secondly, that my observations are not entitled to so much confidence as are those of others who have preceded me; and, lastly, that the conclusions I have arrived at, are opposed to facts which they believe they have observed. I must, before proceeding any farther, apologize for the egotistical statements which these remarks will necessarily oblige me to make; but I do this with the less regret, as, by showing the falseness of the grounds on which these gentlemen endeavour to invalidate my testimony, I shall add additional weight to the facts I have brought forward.

---

* The poisons more directly alluded to, are those which evidently destroy life by their action on the nervous system.

I certainly must repudiate the imputation that is attempted to be cast on my experiments, by saying that they were undertaken to support a particular theory, for I believe I entered on these investigations with a mind much less likely to be prejudiced by erroneous views than those who had preceded me. I certainly had endeavoured, before proceeding to the investigation of the action of poisons, to satisfy my mind as to the truth of the data, a knowledge of which was necessary for its successful elucidation; and if, in so doing, I had arrived at new truths, which led me to conclude that many of the previous observations on this subject might be erroneous, I know not how this additional knowledge could incapacitate me from conscientiously undertaking an investigation, in which these newly discovered facts should find their application. If, in support of the facts which I had brought forward to prove the rapidity of the circulation, it had been necessary to show that poisons could only act when absorbed into the blood, I certainly might have had my mind prejudiced in favour of such a theory; but the proofs of the rapidity of the circulation, in different species of animals, were arrived at by experiments which were perfectly independent of the question as to the action of poisons, and would not have been at all shaken had they been found to act by sympathy, or nervous impressions. If, early in my researches, I adopted the theory of the absorption of poisons, it was that this theory was found to harmonize with the facts that I had observed, and although some of these facts were opposed to the observations of others, yet, as these observations had evidently been made under the influence of erroneous impressions, I would not allow them to have that weight which the names of their authors might otherwise have demanded for them. It must be evident, I think, to every impartial observer, that Dr. Christison himself was far more likely to labour under preconceived views than myself, for placing, as he evidently does, the greatest reliance on the facts brought forward by Sir B. Brodie and others, as to the instantaneous action of poisons. I believe it to be impossible for so philosophical a mind as that of the author of the treatise on poisons, not to have been imbued with the idea that they *must act* by an impression conveyed through the nerves, as this is the *only logical* deduction which could be derived from such data, particularly when we remember the views that were then prevalent as to the time required for the circulation of the blood.

As to how far my observations are worthy of credit above those of others, this is a point which must eventually be decided by others besides Dr. Christison and Mr. Taylor; but I would make one remark on an observation of Dr. Christison's, concerning the accuracy of my statements in regard to the intervals of time at which the phenomena occurred. Dr. C. states, "It is not unreasonable to claim for Sir B. Brodie, Dr. Freer, Mr. Macaulay, and Mr. Taylor, all of them practitioners of experience, the faculty of noting time as accurately as Dr. Blake himself." Now, without wishing to deny to any of these gentlemen the faculty of noting small intervals of time, I would observe, that I consider myself to have possessed some advantages in this respect over those who had preceded me; for, before commencing my researches on the action of poisons, I had been occupied for some time in experiments in which it was essential that short intervals of time should be strictly noticed, and I had thus acquired some practice in observing physiological phenomena, under this point of view. At the commencement of my experiments on the action of substances introduced into the blood, I strongly experienced the difficulty that exists in accurately noting the periods at which physiological phenomena occur, particularly when they follow each other with rapidity. In fact, I have to regret that some of the experiments published in my first memoir on this subject contain errors, on account of my not having then acquired the habit of accurately noting time; but, independently of the advantages which my previous experiments had given me in noting time, they had also shown me the importance of paying attention to short intervals of time in observing physiological phenomena—a fact which had never been so fully recognized by any who had preceded me, and who, therefore, were not likely to take those precautions which I adopted, in order to arrive at correct data on this point. But it is not on my own observations alone that the facts I have stated rest. Dr. Sharpey, who assisted Dr. Christison in his experiments, was also present when many of my experiments with conia and hydrocyanic acid were performed, and could bear testimony as to the accuracy of the facts recorded.

As regards the objection raised against my observations, that they are all of a negative character, and therefore cannot invalidate the affirmative testimony of those "who had perfectly well observed what I had not been fortunate enough to witness," I would remark that this objection loses much of its force when we consider under what erroneous impressions these former observations had been made, and also that my conclusions do not depend on a single experiment, in which I might possibly not have witnessed what some more fortunate experimenter had found; but that such should be the case in a long series of experiments, varied in many ways, and more comprehensive than any of those which had been before performed, is a supposition too improbable to be entertained.

Before proceeding to criticize the *facts* which have been brought forward as opposed to the conclusions I have arrived at, I regret to have to notice a mis-statement, which both Dr. Christison and Mr. Taylor have made, as regards my views on the action of poisons, and by means of which they have endeavoured to prove that the results I have arrived at must be false. Both these gentlemen state, when discussing the subject of the general action of poisons, that I have arrived at the conclusion that no poison will act on an animal in less than nine seconds; and then, having brought forward instances in which hydrocyanic acid had even produced death in a shorter time than I had stated was required for it to give rise to the first symptoms of its action, they, without the slightest difficulty, prove that my conclusions must be erroneous. Now, in the memoirs before alluded to, I state that in *the dog* a period of nine seconds is required for a poison, that is *introduced into a vein,* to give rise to the first symptoms of its action. Nor can this statement be at all invalidated by Dr. Christison and Mr. Taylor, finding that *hydrocyanic acid,* when put *into the mouth* of a *rabbit,* will even kill the animal in less than nine seconds; for I have proved, and these gentlemen have copied the statement in other parts of their treatises, that, in the *rabbit,* the circulation is fully *three times as rapid* as in the dog, so that a poison may only require one third of the time to act in the former animal to what it requires in the dog; and I have also shown that a volatile poison like hydrocyanic acid will act more rapidly when applied to the tongue than when introduced directly into the veins, on account of its being inhaled into the lungs, and thus finding a shorter way to the brain, than when it has to pass through the right cavities of the heart. Had Dr. Christison and Mr. Taylor fairly stated these facts, their observations, that hydrocyanic acid would kill in less than nine seconds, would not have so cleverly overturned my conclusions. Had these gentlemen succeeded in proving that, in the rabbit, or in the cat, hydrocyanic acid, when applied to the mouth, will produce its effects in less than two seconds and a half, this fact would have been inconsistent with the views I had supported; but, notwithstanding their statements about the instantaneous action of this poison, I believe they have never seen it act in a shorter time than that above stated.

I shall now proceed to notice the facts brought forward by these gentlemen, which they consider as supporting the theory of the sympathetic action of poisons. It would appear that the only experiments they have performed on this subject since the publication of my papers, have been made with concentrated hydrocyanic acid, on cats and rabbits. It is unfortunate that, in endeavouring to test the correctness of a theory which is of considerable physiological importance, these gentlemen should not have better understood the nature of the problem to be solved; as then they would not have selected, for elucidating it, means which were precisely those least calculated to throw any light upon it, and in the use of which it was the most difficult to guard against sources of error.

In selecting cats and rabbits to perform their experiments on, they could not have chosen worse; for in these animals the rapidity of the circulation is such, that the difference in the interval which should elapse between the application of a poison and the appearance of the first symptoms of its action, would not, according to the one or the other theory, be more than two and a half or three seconds; and I shall presently show that the determination of even this small interval is rendered doubly difficult by employing hydrocyanic acid in these experiments. Had their experiments been performed on horses, or even on full grown dogs, the difference in the time in which a poison should act, according to the one or the other theory, would have been an interval much more easily observed. The extreme volatility of the concentrated hydrocyanic acid renders it but little fitted for performing experiments of this sort, particularly on the smaller animals, for it is necessary to use care that the acid should not be brought near the mouth of the animal until the moment that it is to be applied, otherwise the previous inhalation of the vapour would totally vitiate the experiment. Its volatility also enables it, when applied to the tongue, to find a shorter way to the brain than would be the case with a poison which could not be volatilized so as to pass directly into the lungs; and this tends to render the interval that should be observed on the supposition of its absorption still shorter, and more difficult to be noted.

Now, to the correct appreciation of this short interval of two and a half or three seconds, there appears to me to be an obstacle which renders it almost impossible for us to avail ourselves of these means for deciding which theory of the action of poisons is correct. This obstacle arises from the pain caused by the application of any quantity of the acid to the mucous membrane of the mouth. Owing to its extreme volatility, its sudden evaporation will cause great cold and pain, and I believe its vapour will, under these circumstances, produce irritation of the glottis;—from both these causes, struggles instantly follow the application of the poison, and it is almost impossible to distinguish these struggles from the first symptoms of its action on the nervous centres, which so rapidly follow. I have no doubt but these considerations will afford an explanation of the cases of instantaneous action, which both Dr. Christison and Mr. Taylor state that they have observed.

The whole of the recent experiments with this substance, published by Dr. Christison, with the exception of one, tend to prove that the acid acts by absorption; as they show that a sufficient interval elapsed, between the application of the poison and the appearance of the first symptoms of its action, for it to have reached the nervous centres. The only exceptional experiment was one in which the acid was used in sufficient quantity to produce pain and struggles at the moment of its application, and I have no doubt but that these struggles were regarded as the results of its poisonous action. On the previous experiments, performed by Dr. Christison, with conia, I must still be permitted to doubt; as, in those which I made with this poison, I never observed it produce instantaneous effects. In these experiments also, Dr. Christison appears to have chosen those re-agents which were best fitted for leading him into error; for they were performed on young animals, in which the rapidity of the circulation is so much greater than in those which are full grown.

The evidence which Mr. Taylor brings forward in support of the sympathetic action of poisons, by quoting the statement of Addison and Morgan, that the Wourali poison would act even when it was not allowed to reach the brain, does not require any comment. But when the sources of fallacy which vitiated these experiments with the Wourali poison had been pointed out, he should not have brought them forward in a scientific treatise on poisons without, at least, stating the objections to which they were open.

I have performed some additional experiments on the action of these poisons since the publication of my former researches; but as they are perfectly analogous to the facts that are already before the public, I think it better not to occupy your pages by entering into details. It will, however, perhaps be useful to relate one of them, in order to show the precautions that were taken to avoid error. The experiment was performed on a rabbit, concentrated hydrocyanic acid being used as the poison. One end of a small glass tube was blown out before the blowpipe, so as to contain about half a drachm; this was filled with the poison, and the orifice of the tube closed with a glass stopper. The enlarged part of the tube containing the acid was introduced into the mouth of the rabbit, and placed between the points of a strong pair of forceps, so that by closing the forceps, at a given signal, the tube would be crushed and the acid escape into the mouth. The advantages of this arrangement were, that it insured the application of the acid at the instant being noted with much greater certainty than could be obtained by simply pouring it on the tongue, and I also avoided all danger of the animal previously inhaling the vapour of the poison, as the tube was five inches long, and well closed. On the poison being applied the animal was left at liberty, so that we could more readily observe when it lost the power of voluntary motion. At the moment of the application of the poison, the animal seemed to suffer considerable pain; it jumped off the table, and when on *the floor of the room, it was perfectly able to stand on its feet.* At two seconds and a half after the application of the poison it fell on its side, and it was dead in five seconds. This is but one of many experiments which have been performed on cats and rabbits, and in no instance have I observed instantaneous death, or even the instantaneous action of the poison.

Were the theory of the sympathetic action of poisons to be judged but by these facts alone, it would not be difficult to disprove the statement of Dr. Christison, that "the balance of testimony is in favour of those whose accuracy I impugn." But when we consider that this is but the weakest part of the testimony that can be brought forward, to prove that poisons can only act by absorption, when we take into service the facts furnished by so many experiments, which prove that the nerves are *incapable* of propagating the action of a poison from the part to which it is applied, and that it will not act unless it is allowed to enter the general circulation, we must admit that the theory of the sympathetic action of poisons, must either be supported by new and more conclusive evidence, or abandoned altogether. For these new facts I have as conscientiously sought as Dr. Christison and others; and if I have not been so fortunate as to discover them, it is that I believe they do not exist; and I think that, by using proper precautions to guard against error, they will escape the observation of others as well as myself.

St. Louis, *May* 3, 1849.

Art. XII.—*On Contagion.* By Samuel Henry Dickson, M. D., Prof: of Theory and Practice of Medicine in the University of the city of New York.

The discussions upon this important and interesting topic have been of late assuming a more and more definite form, and we are now better prepared than at any former period for the consideration of the various doctrines which have been proposed and maintained in reference to it.

There are two essential elements which go to the description of this source of disease; first, that it should be germinal, that is, self-multiplying, reproductive; and, second, that this reproduction should depend upon, or be favoured by the very processes of disease which itself gives rise to.

The first of these propositions is undenied, and therefore need not be argued. A word has been coined to express this characteristic property of certain diseases by the Registrar-General of England, and is employed in his annual reports—"Zymotic;" the etymology of which, indicating an analogy with fermentation, might be imagined to intend a leaning to the opinion, that the organic germ of the affections thus classed is of vegetable character. But the phrase is loosely applied, including some endemics of which we cannot affirm the self-multiplication, and excluding many contagions, all indeed that are not febrile. The several modes of reproduction will be spoken of hereafter.

In the present state of our knowledge of the history of contagion, we cannot venture to declare it to be the *exclusive cause* of contagious diseases. All such diseases must have had a commencement independently of such cause, the very existence of which is secondary and derivative in the nature of things. Nay, some contagious diseases begin now-a-days, under our own eyes, spontaneously, or without perceptible connection with any source of contagious matter; as typhus, which none will doubt to be generated by filth and want of air, and low living; and psora, which will always arise among any very uncleanly collection of people who are supplied with food and fresh air enough to retain their general health; and gonorrhœa, produced by a more local form of impurity; and ophthalmia, developed by a certain concurrence of circumstances in Egypt often, or constantly, and elsewhere occasionally; and plague, a denizen of the same region; and yellow fever, indigenous in some American cities, and upon the coast of Africa.

The contingencies which give rise to typhus, psora, gonorrhœa, ophthalmia, pestis and yellow fever, may bring them into existence either directly or indirectly; *directly*, by exciting the tissues of the body into the morbid actions in which these diseases consist; *indirectly*, by first generating the matter of contagion. The former seems to me much the most probable. Life, whether a principle, property, or condition, is known to us only as *derivative* or secondary. "La vie ne nait que de la vie," the axiom of Cuvier, is absolutely true, Crosse's Electrical Acarus, and Weekes' Electrical Fungus to the contrary notwithstanding. It is not necessarily transmitted through an ovum, however, as Harvey laid down. Dead animal and vegetable matter assumes life by mere admixture, and interposition with living fluids and solids after digestion and absorption. Organisms of various form, cells and granules, receive life from other organisms in which life abounds, or from which it is transferred to them under an infinite diversity of contingencies of disease, and decomposition and decay. This transference of life we see hourly all around us; in the presence of morbid parasites, animal and vegetable; in the masses of animal and vegetable life produced during animal and vegetable decomposition; and in the infinite abundance of infusoria wherever such decomposition can even be suspected. But the matter of contagion must be living matter, must be organized, however obscurely or imperfectly; and in whatever character or form, whether simply cellular or of complicated structure, whether a fungous sporule or an animalcule, its capacity of self-multiplication, of indefinite reproduction, necessarily implies its vitality. Nothing inorganic or inanimate can propagate itself.

The facts that go to prove its germinal character are clear, abundant, and familiar to every one. If its presence were only one among several and varied circumstances, concurring in the production of a given disease, its absolute sufficiency, or exclusive efficiency, might be questioned; but we have numerous examples in which all the concurrent contingencies may be thoroughly changed, or entirely got rid of, as in inoculation with vaccine matter, small-pox, or gonorrhœa, or syphilitic pus; and yet the result be regular and uniform. Hence, it is absolutely necessary to the definition of contagion, that each of its forms shall develop, or tend to develop, a materies morbi reproductive and self-multiplying; and propagating itself through, and by means of, diseased processes similar to, and identical with, those from whence it sprung.

The matter of contagion, as presented to us *palpably*, has undergone close examination and repeated experiment. In small-pox and vaccine, it exists in the limpid matter of the vesicle, lingers in the pus formed during maturation, and is still potential in the dried crust or scab. The foul fluids upon the surface of a chancre; within a syphilitic bubo, and the bubo of the plague; upon the conjunctiva in Egyptian ophthalmia, and in the gonorrhœal urethra; in an itch pimple, and a herpetic vesicle; all contain it, and admit of desiccation, without the loss of its characteristic and very peculiar properties.

"All fixed contagions," says Berres, "are, at their origin, alike in form, consisting of larger or smaller globules; we have no means of explaining the extreme variety of their effects and operations. We must allow a specific life and separate existence to contagion." Two assertions are made here, which should not be hastily received as established truths. I am not sure that the palpable matter of contagion has been actually seen in an insulated state, though the author just quoted describes it minutely. "Moist contagious matter," he says, "is a vesicle $\frac{1}{5000}$ of an inch in diameter with no trace of organization; the dry is in the shape of scales, scurf, or abrasions; its essence consists in an aggregation of semi-transparent, grayish-white globules $\frac{1}{10,000}$ of an inch in diameter." But if we reflect that the matter of contagion is, in certain cases, diffused in the blood, as well as mingled with the limpid fluid of a vesicle, and combined with pus, not to speak in anticipation of its impalpable condition, we shall scarcely venture to conclude that we have detected or reached, and insulated it. The fluid of the vesicle contains it; it exists in the pus globule and in the cancer cell; but the cancer cell, the pus globule, and the lymph of the vesicle, are composed of many elements, and do not consist of contagious matter only. Chemical analysis has shown nothing peculiar in either of them. Lassaigne's analysis of small-pox pus exhibits nothing new or characteristic; presenting only a larger proportion of saline ingredients than is found in other pus. Like its composition, the form and appearance of contagious matter are unknown. Its minuteness is ultra microscopic.

Nor can we admit without farther discussion, the assertion made so distinctly that it enjoys "a specific life and separate existence," in other words, a sort of parasitic condition. Vogel declares "the question, What are parasites? is not yet ripe for decision." How are we to distinguish separate existence—true individuality? Is there any test that we can apply with definiteness and certainty?

Houston tells us "that the microscope shows particles, floating in the blood of definite and uniform shape, endowed with a veritable organization, individually alive, and forming a living mass. The white globules are fruitful in the production of granules, which granules are themselves, each and all, possessed of an independent life."

Addison maintains "the existence of active molecules" (the granules of Houston) in the interior of the cells of blood, saliva, and pus, to have become an established physiological fact." But Williams expresses a reasonable doubt whether motion constitutes a proof of individual vitality as here inferred.

The spermatozoa are treated of by Owen as members of the class entozoa, though he admits, "it is still undetermined whether they are to be regarded as independent organisms." These bodies not only present the phenomena of apparently spontaneous motion, like the blood globules above mentioned, and the moving filaments of the pollen of plants, and the inanimate particles enumerated by Williams; but they are reproductive probably. "There is reason," says Owen, "to suspect that they are oviparous; and they are also stated to propagate by spontaneous fission."

What shall we say of the hydatid, so frequently ranked among parasites? Owen, who recognizes it as "an independent organized being," denies it a place in the animal kingdom. But its chemical composition seems to forbid us to arrange it among vegetables; and indeed Lallemand says that he has seen voluntary motion in the human acephalocyst. Its reproduction by gemmules is familiarly known. Tubercle, too, looked upon doubtfully as a parasite by

Laennec, has been propagated, like hydatids, by Klencke, by inoculation. The cancer cell, which this author calls "semi-individual," both he and Langenbeck have propagated in that way. Is there then an intermediate condition, expressed as above, by the phrase "semi-individuality," in which we must place blood globules, spermatozoa, acephalocysts, tubercle, and cancer cells? For my own part, I regard the term as happily chosen, and, with the exception of tubercle, which is a morbid product characterized by no vital property whatever, I would consider all the bodies mentioned as endowed with a derivative life, not an independent one, but capable of transfer and multiplication. But the primary form of all life, which, according to Schwann and Schleiden, is cellular, is thus derivative and dependent. The lower we descend in the scale of vitality, the more transferable we find it. Thus vegetable gemmules live readily after inoculation or grafting; and thus some of the lower order of germs found in and upon the animal body, whether themselves animal or vegetable we know not yet, as the hydatid and cancer cell, and some fixed contagions. The property of reproduction belongs to all these; but it has never been alleged to attach itself to tubercle.

We have abundant proof that the matter of contagion exists diffused in the blood. Scarlatina and rubeola have been conveyed by inoculation with this fluid. Small-pox not unfrequently affects the fœtus in utero; nay, there is a case on record, in which the child was attacked in the womb of a mother, exposed to the infection, but enjoying the immunity of a previous attack. It is a curious question, why this impregnation of the circulating fluid does not more generally occur in pregnancy. It would seem closely analagous with the conveyance of disease by transfusion in Coleman's experiments, and with the development of scrofula in the fœtus, as in the instances given by Lloyd.

A similar diffusion of contagious matter in secreted fluids, is presented in two examples at least. The hydrophobic saliva undergoes this poisonous change in the canine and feline tribes; whether in the human subject, is not clearly ascertained. Thus also inoculation with the tears of a patient labouring under rubeola, is said to be efficient in communicating the disease. The same thing is affirmed to be true of the mucus from the nostril; but this could hardly be procured free from some admixture from the tears trickling into it.

In some of the fixed or palpable contagious matters, we find animalculæ, which therefore, have been regarded as the cause of the disease, with which their presence is coincident; nay, as the very materies morbi. But we must not be hasty in drawing this conclusion. All diseases, or almost all, have been at one period or another ascribed to animalcular annoyance, and the question in regard to some of them still remains as doubtful as it is interesting. In some instances, the uniformity of the presence of animal life is denied. Dysentery was by Linnæus ascribed to an acarus, which few have been able to find. Klencke traces a connection between periodical attacks of vertigo and animalculæ in the blood; but he stands alone in this opinion. Reese saw animalculæ in recent black vomit; but no one has since repeated the observation. Beauperthuis and Roseville assert that they have uniformly found animalculæ in cancer, to which they ascribe the disease, "erroneously," says Vogel, "even allowing that infusoria do sometimes occur as incidental parasites in cancerous ulcers." Donné and Ehrenberg describe a parasitic animalcule, an acarus or a trichomonas vaginalis, as inhabiting the vaginal mucus in syphilis. But Gluge, Valentin, and Vogel, regard the minute objects thus denoted as mere debris of uterine epithelium. And even when the uniform presence of the animalcule is undoubted, it may still be the effect and not the cause of the disease with which it is thus coincident. "The parasite," says Vogel, "should never be identified with the disease itself." Yet Vogel unhesitatingly ascribes psora to the itch insect. But psora is not only communicable by contact, but by fomites, upon which the exuding fluid has been long dry, as upon clothing, bedding, gloves, &c. It seems too much to assume, without proof, that the vitality of the minute acarus is retainable throughout an indefinite period of exsiccation, and that he may revive when moistened, ready for all the complicated functions of his peculiar mode of existence. Thus, also, certain vibriones being found in chancre pus, Donné regards them as the cause of lues venera; but Ricord denies this, upon the sufficient ground that bubo pus, containing no vibriones, is also contagious. An experiment of pretty conclusive character, might, I think, be made in psora. As the insect is not always found in the fluid of the itch vesicle, it might be used for inoculation, after careful examination with the microscope. The transfer of the insect taken from the fluid, would not be a test so satisfactory; as his body could not be perfectly cleansed from the fluid in which he lives immersed.

In certain contagious affections we discover the presence of parasitic vegetation, and this with great uniformity; as in tinea favosa, porrigo, and mentagra. The vegetable life here is always of the very lowest order, and is classed among the fungi. The same doubt exists here, as to the nature of the relation between the phenomena. Even by inoculation it is impossible to decide the question; because, from the extreme minuteness of these productions, it is impossible to transplant the vegetable, without some of the diseased crust or dried fluid in which it has grown and fixed itself.

We have now noted the several modes of alleged existence of the palpable matter of contagion. It is presented to us, 1. In the cell form. Langenbeck and Klencke have repeatedly conveyed cancer by inoculation with the cancer cell.

2. In the newly produced fluids of the exanthemata: as in the lymph and pus of vaccine, variola, and varicella.

3. In the pus globule of syphilis, of gonorrhœa, of Egyptian ophthalmia, and of plague bubo.

4. In the ichorous exudation of herpes, of hospital gangrene, and it would seem of erysipelas also.

5. In connection with the presence of animalculæ, as, especially, in psora,

less certainly in chancre pus, and, as Velpeau believes, in hospital gangrene, mentioned above.

6. In connection with fungous vegetation, as in tinea and porrigo, mentagra, and plica polonica.

7. In the blood, diffused as in scarlatina, measles, and small-pox.

8. In some of the normal secretions, rendered contagious by this morbid admixture, as in measles and hydrophobia.

I have already acknowledged that, although we thus apprehend and possess ourselves of the matter of contagion in these several modes, we have never yet separated or insulated it, so as to ascertain its external appearance and qualities, or detect its elementary composition or constitution in any instance. It has not been reached either by our best microscopes or our nicest chemical analysis.

In addition to what I have already said of its specific life, its parasitic character, so boldly affirmed by some theorists, I remark, briefly, that of the known parasites, both animal and vegetable, it is not proved that they are, in any well settled instance, the causes of the diseased condition with which their presence is coincident. Some parasites are not morbid in any sense whatever. Look at the bark of a tree in a forest, or an orchard, and see how it is beset and mottled with lichens or mosses. The live oak of the south, the solemn druid of the woods, flourishes mantled in the flowing drapery of the tillandsia usneoides, the Spanish graybeard, as it is sometimes termed. Animals also are infested with dependent animal life, both within and without. Now, no one imagines that in their ordinary number the ectozoa are at all injurious to health. Wilson, after Simon, describes a cutaneous acarus, inhabiting the oil tubes of the skin, as not only harmless but useful, "by stimulating these tubes to get rid of any undue accumulation of their contents."

Among the entozoa—which, as some naturalists maintain, are intruders from without, not natives of the regions they occupy, but immigrants from the external world—the most frequent and familiar to us, the intestinal worms, are only injurious to us incidentally, or, as it were, mechanically, by their undue amount. Nay, Parr and Rush maintain that they are appendages of a sound constitution, and aid in preserving its healthy state, acting as scavengers, or in some other way.

It is not by any means established that the fungi found on diseased surfaces cause the morbid condition with which they are associated. Vogel declares, that "they do not in general develop themselves upon mucous membranes, until, by morbid processes, a deposit of coagulated fibrine, which serves as a bed, has been prepared for them, and until this exudation has passed into a state of putrid decomposition." Yet it is not easy to perceive how this can be true of the fungi found in the aphthous affections of young children; nor can I imagine "a decomposing exudation within the sheath of the hair in mentagra," or in the interior of the hair roots in herpes tonsillaris and plica polonica.

What, then, is the relation of parasitic life to contagion? Shall we say with Vogel, that "the parasite should never be identified with the disease," or conclude with Prof. Mitchell, that "many diseases are proved to be dependent upon or arise from" parasites? The first-named author has made a distinction between parasites and pseudo-parasites, entirely unsatisfactory and indeterminate. The pathological interest of this branch of natural history lies in the assumed or discovered connection between the presence of animal or vegetable life and the symptoms attendant. Where no regular effect follows their presence, and it cannot be known or detected but by accident, our interest in the inquiry ceases. We cannot conjecture the existence of trichina spiralis, nor of the acephalocyst, nor the spiroptera, nor even of the strongylus—that is to say, there are no phenomena known to us as produced by them, or attendant specifically or otherwise on their presence. We do know pretty conclusively when a tenia resides in the digestive tube, though not, perhaps, with absolute certainty; so we may affirm also of the ascaris and lumbricus; the filaria is easily discovered; we infer the presence of the itch insect in psora readily enough, and of vibriones in chancre, and fungi in mentagra and porrigo, though we may not have seen them with our lenses. Perhaps it is not safe to say, in the present state of this department of science, that the former are accidental—do not belong to us—are merely temporary intruders when found; but we surely find a natural and definite line of demarkation between such forms of animal and vegetable life as exist or are noted elsewhere and such as are *peculiar to the human* economy, and *never are* or have been seen *anywhere else.* These last are, in every sense, *true*—the former, *pseudo*-parasites, in human pathology. Farther: if the absolute co-existence of certain specific morbid conditions, which never occur without and are never wanting to the presence of any definite form of parasitic life, be made out, and if these morbid conditions are communicable to healthy bodies by contact or near approach, it is illogical and unreasonable to refuse to consider the animalcule or fungus present as virtually the materies morbi. It finds in the diseased body its nidus, its soil, its local habitat; its transference to a healthy body is followed by the production of such disease as fosters it and propagates and multiplies it infinitely.

Whatever be the precise nature of a cell, whether animal or vegetable, whether absolutely an independent vitality, or a semi-individual, if it be never found but in the animal body, if always found in connection with and coincident to some special form of disease, and if such disease be regularly produced when such a cell has been introduced into the organism, then it is a *contagious cell;* it contains the materies morbi. And so of animalculæ and fungi; if found only in the animal body, if uniformly coincident with special diseases, which cannot or do not exist without their presence, and follow them when transferred, they convey the contagious principle—they are virtually the materies morbi. It is Liebig's idea, that, in examples of successful inoculation, a sort of ferment takes place in the fluids; but fermentation is nothing but vegetable increase and germination. The analogy, however, is general. Each example is peculiar, separate, distinct. In every contagious morbid poison some new result has followed the combination of the elements which go to constitute it, which the highest magnifying powers of our best microscopes have not shown us, nor our nicest chemical analyses prevailed to detect, any more than they have made manifest the odorous particles of musk or of the rose.

If this be true of the fixed and palpable contagions, what shall we say of the tenuity of those which are designated as *impalpable,* which offer to us nothing tangible, but confound us by their invisible potency, and evade us by their independence of all definite modes of limitation?

Variola, as everybody knows, is not only conveyed from a diseased to a healthy body, by the insertion into a wound of a portion of lymph or pus, or dried scab, from a pustule, but is efficiently active *at a distance*—a healthy body being infected in the neighbourhood of a diseased one. Now we must ascribe the phenomena here, either to the radiation and diffusion of the same materies morbi which is contained in the scab, pus, and lymph, and which, mingled with the blood of the mother, passes through the placental tissues and infects the fœtus in utero, or we must assume the production and elimination of two efficient forms of contagious matter, the one fixed and the other volatile. But the first I have already proved to be ultra microscopic in the minuteness of the atoms which constitute it in certain cases, and, therefore, I see no difficulty in its elimination and radiation from the diseased body. It is, perhaps, relevant to observe, that this remote infection does not occur in any instance in which the parasite, whether animalcular or fungous, is visible, or has been detected by the microscope—it is chiefly confined to the febrile class of contagious diseases, and, perhaps, belongs exclusively to that class; but as there is yet some dispute as to the febrile, or non-febrile, character of certain epidemics, I abstain from announcing the rule as established. The portion of atmosphere about the person of a small-pox patient becomes thus charged with contagious atoms. But, like all other zymotic diseases, small-pox, sporadic and perennial in great cities, becomes, from time to time, epidemic—that is, widely and pestilentially prevalent. Healthy bodies are now infected in great numbers, most obscurely, and without known approach to a diseased body—the atmosphere is filled with the materies morbi. In the winter of 1847–48, I attended forty patients attacked with small-pox, not one of whom had ever seen a case, or consciously visited an infected neighbourhood. Now we must conclude, either that the contagious matter is diffused in prodigious abundance from its human sources, or that some other source, atmospheric or telluric, exists, from which the disease or its cause may spring.

But the spontaneous production of small-pox is contended for by no one. In this field of hypothesis, I do not hesitate to offer the suggestion, that in the animal exhalations collected in the dense population of a crowded city, the organic germs, fungous or animalcular—vegetable or animal, rather—may find occasionally all the elements essential to their germination and growth; and may multiply and propagate themselves in an atmosphere thus filled with animal matter adapted to their support and development. A bulb, or a seed, which ordinarily requires soil to vegetate in, will, nevertheless, grow if laid upon a surface which admits of the moistening of its roots, as we see every day in the flourishing of rice laid upon damp cotton, and the budding of a hyacinth in a glass bulb filled with water. Nay, the numerous *air plants* furnish us with a still closer analogy; and many of the lower classes of minute insects will produce several generations in succession without access to their special food or habitat, as the *aphis* and the common *tick* of our southern country. Thus, then, whether we regard the materies morbi of contagious epidemics as fungous or animalcular, there is no difficulty in comprehending their propagation and extension, widely, actively, promptly, in dense populations and crowded cities; favored always, as we notice, by heat, moisture, and atmospheric stillness; repressed, more or less, by cold, dryness, and ventilation, winds, or dilution of air. There is no more difficulty in explaining why a sporadic pestilence should be only occasionally epidemic, than in pointing out the causes which make one season prolific in familiar fruits and insects, and another as remarkable for their comparative scarcity.

I have referred specially to small-pox; but the same things are equally true of all the contagious diseases of which fever is an essential part, with the single exception of vaccine, which is incapable of affecting a sound body unless admitted by a wound—and which gives out no radiation, no impalpable contagious matter. We must not forget, however, that it is not a human disease. Like glanders and hydrophobia, it is generated among the lower classes of animals, and, like them, it may be contagious by exhalation, or even epidemic, among its proper subjects.

I have already mentioned the fact, that none of the non-febrile contagions are impalpable or diffusable in the air. All require contact. Even the itch insect does not travel; at least, he has never been met with on a journey.

One great obstacle in the remaining steps of our inquiry, is the uncertainty how far we may allow ourselves to be led on by analogy. Variola shows us a palpable contagious matter, and also, undeniably, spreads abroad an impalpable contagion; but no two contagious diseases present exactly similar phenomena. Scarlatina and rubeola have been communicated, we are told, by inoculation with blood, and the latter by means of tears. But we have now entered the domains of doubt and dispute, and as we shall find the mass of physicians denying the contagiousness of certain diseases, because no fixed mode of contagious matter has been detected in them, so, on the other hand, Chapman and Bell express their skepticism as to the existence of any palpable contagion in measles and scarlet fever, and prefer to attribute the infection of those inoculated by Home, Speranza, and Von Katona, to an epidemic diffusion of the impalpable materies morbi in the surrounding air. Following the general belief, however, as it is my own, I enumerate, as manifesting both the palpable and impalpable modes of contagious infection, pestis, erysipelas, hospital gangrene, and varicella, in addition to those above mentioned. I do not pretend to make the list complete, but wish merely to give varied examples.

There are, besides these, certain diseases which have afforded room for almost interminable and angry discussion as to their contagious or non-contagious character. These exhibit no fixed or palpable materies morbi; all attempts to convey them from a diseased to a healthy body, by any mode of inoculation, has failed; there is much irregularity in the proportion of infections by near approach; and yet they are regarded, properly, as contagions, because they are zymotic, rapidly and widely becoming epidemic, self-multiplying, and easily propagated in dense populations and crowded cities—one case often serving as a focus around which is radiated a poison, intense and abundant enough to infect thousands with a morbid condition precisely identical. Such is typhus; such pertussis; such puerperal fever; such dysentery; such yellow fever; such cholera asphyxia. Each of these has been the topic of vehement dispute; but time, which affords the best touchstone of truth, has gradually accumulated facts enough to satisfy the more observing and philosophical authorities in our science; and the period is at hand when all specific diseases capable of epidemic diffusion, that is, unconfined by any exclusive local limitation, shall be received into the same category, and pronounced contagious.

Of these, I hold that they differ less than is generally supposed from the acknowledged contagious affections. It is true, that the materies morbi is not detained or fixed in any of the fluids of the body, or disposed to collect itself in any cell or globule; nor does it assume any shape visible or tangible. But even in the so-called palpable contagions, I do not admit that we have detected the form, or outline, or composition of the contagious germ. With very few exceptions, already specified—with very few exceptions, and these, perhaps, admitting of some doubts—whether a cell or a sporule; whether animal or vegetable; whether mixed in blood, lymph, pus, tears, or saliva, it is ultra-microscopically minute and imperceptible. And in the febrile contagions we have examples of contagious matter unfixed, undetected, indescribably tenuious, irregular, and entirely uncertain as to its limit and potency—as in variola, scarlatina, rubeola, and pestis.

That the materies morbi in the disputed instances under consideration is, as in all other zymotic diseases properly so called, an organic germ capable of self-multiplication and reproduction, surely needs no proof. Otherwise we could not account for their extension and propagation, their absolute freedom from exclusiveness as to locality, their attendance upon migratory masses, their close adherence sporadically to well adapted foci, and their prompt multiplication under fostering contingencies. These are not modes of existence, or laws of causative action of any known inorganic elements.

That it finds a necessary nidus, centre, or habitat in the human body, is also evident from the fact that these diseases only prevail where there is crowded human life, whether in dense cities, or camps, or emigrant ships, or caravans; and that their virulence is always, *ceteris paribus,* directly proportioned to the density of population.

There is no reason for our believing that contagion is exclusively animal or vegetable in its character. In different examples it may be of different nature. In either case the organic germs are liable to be repressed or fostered in their growth by contingencies known or unknown to us, the known having been already alluded to. In either case, they are capable of sudden multiplication to an unimaginable extent under favouring circumstances. I need not go into any statement of the possible increase of animalcular life, or the prodigious augmentation of masses of fungi—millions of each being generated in a few hours from a single individual, and the increase going on in an infinitely accelerated ratio.

None of the hypotheses offered to enlighten and guide us in these our obscure inquiries are free from difficulties, it is true; but the skeptics who deny the organic nature of the cause of these zymotic diseases, have chosen to contend with insurmountable obstacles. Let us select the example of Asiatic Cholera. It is so widely prevalent, that immense masses of the causative poison which excites it must exist on the earth's surface. This poison must either be generated wherever it is active, or it must have been produced originally in infinite abundance to admit of its effective diffusion over such vast spaces. The first notion is most generally entertained; but nothing can be imagined more contrary to all experience or analogy than the telluric elimination, or the atmospheric production of the same inorganic, chemical, or mechanical poisonous agent—call it malaria, or what you will—in the depth of a Russian winter at Moscow, in the burning summer heat of Hindostan, in the autumnal vicissitudes of weather at New Orleans, and in the changeable spring of the Rio Grande and the Ohio; bidding defiance, alike, to climate, and season, and temperature, and over-riding all local contingencies, all geographical and geological peculiarities; gushing from the alluvion of the Delta of the Ganges and the Mississippi, and the arid sands of the great Arabian Desert; hovering over the granite of Staten Island, and the gneiss of New York, and the coal formations and calcareous soils of the Great West; infesting alike the sea-coast and the shores of our fresh-water lakes, the banks of the Seine and the St. Lawrence, the Volga and the Thames—nay, exploding vehemently among the passengers of a solitary barque on the wide Atlantic, healthy until the moment of an abrupt fall of the atmospheric temperature.

If the other horn of the dilemma be chosen, little appears to be gained. Wandering veins of cholera atmosphere, coming we know not whence, and tending we know not whither, cross the track of ships far away on the ocean, or touch upon the coast at remote points, as at Folly Island and the quarantine ground at the outlet of the Hudson and at New Orleans, rebounding to sea again, or disappearing into the upper regions of air, or following the angles and windings of navigable rivers, and the inextricable mazes of roads and highways.

It is curious, that some of those who admit and contend for the organic nature of the germs which constitute the materies morbi of certain forms of disease, should nevertheless broadly deny their contagious character. This is in each case a simple question as to the habitat of the germ, its favoring soil, its proper nidus, its source of life and nourishment. If these be in the human body—if, as Professor Mitchell expresses it, "the affinity is to the person rather than the place," surely the contagious character of the germ is decided. But it is not difficult to prove that, unless we except the immediate district around Jessore, there seems to be no special affinity to place, predicable of the cause of cholera. Its history shows it to be singularly migratory; and it is notable that no spontaneous infection with it has ever occurred in visiting any unpeopled region. Contrast it with malarious fever, remittent or intermittent, in this regard. Let a healthy man sleep in a remote rice field, a dismal jungle, or wild swamp, in a southern summer night; you may safely wager any odds that within three septenary periods he will be seized with disease of known type; but you can procure for such a one an attack of cholera no where but among subjects already labouring under the pestilence, or in their neighbourhood, or as infected by fomites which have been exposed upon or near the persons of the sick. The cause of cholera, unlike the cause of periodical fever, may be transported with persons anywhere; in no place does it remain fixed; it is now totally extinct in many places where it once abounded. In all this it closely resembles the cause of small-pox, which surely relates to person and not to place; which finds its pabulum in a certain proportion of healthy bodies, and dies out when it has consumed it, or marches with them or their fomites to prey upon new food in other healthy bodies.

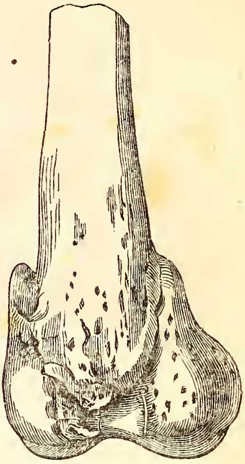
ART. XIII.—*Contributions to Pathological Anatomy.* By JNO. NEILL, M. D., Demonstrator of Anatomy in the University of Pennsylvania. [With five wood cuts.]

CASE. I.—*An Oblique Fracture of both Condyles of the Femur united.*—This specimen was presented to me by Dr. Benedict, from whom I obtained the following history of the case.

An Irishman, of about 40 years of age, in attempting to escape from the third story of the Blockley Hospital, fell from a considerable height, and alighted upon his feet. Upon examining him immediately after the accident, the exact nature of the injury was not very evident. There was no crepitation, no twisting of the foot, no increased breadth of the knee, no difficulty in making passive flexion and extension of the leg. The deformity simulated that of a partial luxation of the tibia posteriorly; the leg was thrown backward and the patella very prominent.

The case was treated by Drs. Benedict and Page for fracture, by a long fracture box, and the usual antiphlogistic means, until the inflammatory symptoms had subsided; and then passive motion was instituted to prevent anchylosis. In six weeks he was discharged perfectly able to walk, and there remained but little deformity and stiffness of the joint. A year afterwards he came into the hospital with typhus fever, of which he died.

Fig. 1.



An accurate idea of the extent of the fracture can be obtained from the drawing. (Fig. 1.) It commenced about the middle of the trochleated notch of the femur and extended upwards for half an inch, and was joined by an oblique fracture upon each side, which completely severed the condyles. Yet they were not much separated, being held in situ by the ligaments, none of which were ruptured. There was, therefore, no increase of breadth of the knee upon pressing on the patella, a sign which Dessault considers as an especial diagnostic of this injury. The site of the fracture also accounts for the want of crepitation. Being in the cellular structure of the bone, the fragments were impacted by the great force and peculiar direction of the fall. Hence the shortening of the limb was so slight as almost to escape detection by measurement, or by the gait in walking.

I find that this fracture is extremely rare, there being no case recorded by Sir Astley Cooper, Boyer, Hines, Chelius, Velpeau, Smith, of Dublin, &c. But Dessault refers to a case reported in the *Journal of Medicine*, and records two cases which came under his own observation. The *first* occurred under very similar circumstances to the one just presented. The force was that of counter stroke; the man jumped from a window, alighted upon his feet, was killed and brought into a dissecting room. Preternatural mobility of the condyles was discovered, and upon dissection they were both found to be obliquely fractured and completely separated. The *second* resulted from kick by a horse. He treated it by his own apparatus for fracture of the thigh and a cure was effected in sixty-four days.

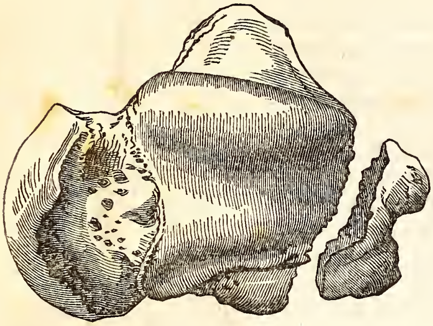
It is from his experience in these cases, that he states that "the signs are easily comprehended."

"A very perceptible separation oftentimes exists between the two condyles increasing the transverse diameter of the knee. The rotula sinking into the chasm between the condyles, renders the part more flat from before backwards than it is in its natural state. If the rotula be pressed in a backward direction, the condyles are separated still further from each other. If, on the other hand, pressure be made on each side of the os femoris, the condyles are brought together and the knee resumes its usual shape. If we take hold of a condyle in each hand, it will be easy, by moving them alternately backward and forward, to make them rub against each other and produce a crepitation which characterizes the fracture beyond a doubt." None of these signs were present in this case.

CASE II.—*Fracture of the posterior extremity of the Astragalus ununited.*—Simple fractures of any part of the astragalus are considered as rare accidents. Force which is sufficient to fracture this bone, will very frequently render the injury compound or comminuted.

This specimen was obtained in the dissecting room, and no history of the accident can be learned. The subject was a young, black female, of about 20 years of age. The right foot was smaller than the left, and much inverted. In fact, it was supposed to be a case of varus. But upon dissecting and preparing the foot, the true nature of the deformity was discovered.

Fig. 2.



The fracture occurred in the line presented in the drawing. (Fig. 2.) The tibia was forced between the fragments and greatly separated them. The larger fragment was pushed forward, and its anterior extremity turned inward; in this position it was anchylosed with the os calcis. The smaller fragment was pushed backwards and remained movable. The tendon of the flexor longus pollicis pedis still played in its groove in this smaller fragment. The articular surface of the tibia rested upon the upper surface of the os calcis, where there was some attempt at the formation of a joint. From the changes which had taken place in the bony surfaces, the accident must have happened a long time before I met with the case.

Case III.—*Renal Calculus in both Kidneys.*—I was called to see a little girl, twelve years of age, early on Saturday morning, April 25th, who had suffered severe pain during the night. She was pallid, feeble, and thin, without fever; had a clean tongue, and natural skin, and complained of pain in the lumbar region, which was tender upon pressure. All of her secretions were natural, with the exception of the urine; it contained a heavy albuminous deposit.

The mother reminded me of having treated the child for incontinence of urine, three years previously. The child was never cured; the incontinence continued, and occasionally she suffered pain. But her indisposition had never been sufficiently severe to induce the parents to apply for medical advice. In truth, she had been running about during the day preceding the attack of pain which was the occasion of my visit.

Early on Sunday morning, the 26th inst., I was sent for again, in great haste. She had suffered another attack of pain, probably a fit of the gravel. When I saw her she was prostrate; skin cool and moist; pulse almost gone; lips livid; voice feeble; countenance expressive of death. I directed stimulating drinks, and sinapisms. At one o'clock, she died.

On Tuesday, the 28th, I made the post-mortem. There was no organic disease, except in connection with the kidneys. These organs were six inches in length, three inches in breadth, and two inches in thickness. The color was very dark, and the natural consistence destroyed. Upon opening them, I found the pelves, calices, and infundibula, greatly distended, and containing a large quantity of matter, partly albuminous, and partly puriform. The parietes were so thin, and the structure so altered, that none of the characteristic appearances of the gland could be observed. The left ureter was much enlarged. The bladder presented no mark of disease.

It was impossible, under the circumstances of the examination, to dissect out these arborescent calculi, with all their stems, branches, and buds, without breaking them. But, after washing the fragments, the broken extremities were, for the most part, readily adjusted.

They present the appearance represented in the accompanying drawings.

Fig. 3.

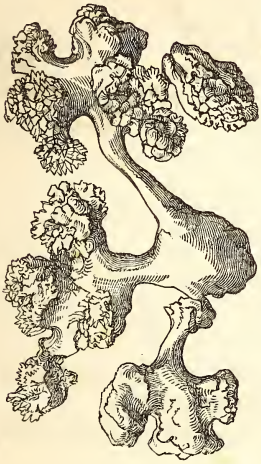
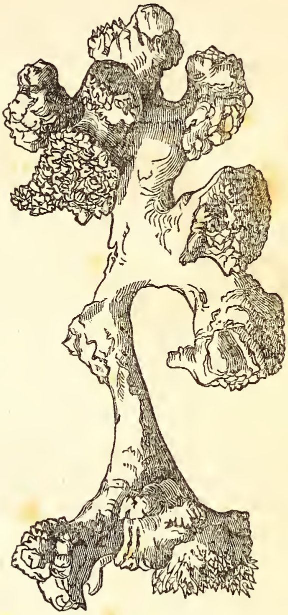


Fig. 4.



(Figs. 3 and 4.) The buds are perfectly white, and composed of a number of beautiful, shining crystals. Some of the stems are stained of a brownish tinge, others appear corroded, as if an acid had been applied. Their weight is 510 grains. Chemically, they consist of the phosphate of lime.

In the *Cyclop. Pract. Medicine*, after the symptoms are described, the following case is recorded: "A remarkable instance of such a calculus occurred in the person of a natural daughter of Sir Richard Steele. No nephritic symptom took place until shortly before her death, when severe pain was felt in the region of the right kidney; fever followed, and speedily proved fatal. A calculus of oxalate of lime, weighing seven and a half ounces, was found in the right kidney, which was so thin by absorption as to be reduced to a mere membrane. In this instance the stone could be felt, during life, through the loins, inducing the belief that the kidney had become ossified.—(*Catal. Museum R. Coll. Surg. London. Note by John Hunter.*)

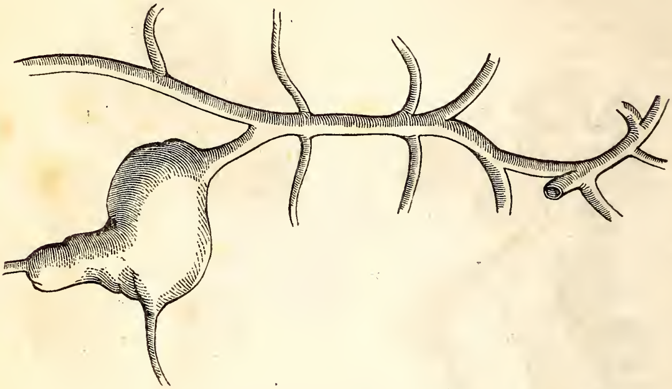
CASE IV.—*Ossification of the Tendon of the Diaphragm.*—This preparation was obtained from a subject in a dissecting room, and no history could be obtained of the case.

The plate of bone was of an oval shape, an inch and a half long, and an inch and a quarter wide. It was situated at the summit of the cordiform tendon, and presented the same characteristics as those bony lamellæ which are frequently met with in the dura mater

Case V.—*Aneurism of the Vertebral Artery, within the Cranium.*—This specimen was presented to me, some years since, by one of the house physicians at the almshouse. It was taken from a man who had suffered with some affection of the nervous system—I think epilepsy.

It occurs in the right vertebral artery, half an inch from its junction with its fellow, to form the basilar. Its shape is ovoidal, as is represented in the accompanying drawing (Fig. 5.), which is of the natural size.

Fig. 5.



The parietes of the sac were thickened by calcareous deposit in the middle coat of the artery.

Art. XIV.—*Case of Cæsarian Operation.* By A. B. Shipman, M. D., Professor of Surgery in Indiana Medical College.

On the 10th day of June, 1848, I received an urgent summons to visit the wife of S. K., Esq., of East Solon, Courtland County, at about twenty miles from my residence. I did not arrive there until eight o'clock on the morning of the 11th, when I obtained the following history of the case. Mrs. K. was 41 years of age, had been married two years, up to which time she had enjoyed tolerably good health. Soon after marriage she began to enlarge about the abdomen, and the menstrual periods became irregular. She thought there was a tumour to be felt there. She consulted a physician, who thought it ovarian. After a while she said it burst and discharged, per anum, a large quantity of matter resembling pus and water, mucus, &c. The size of the abdomen diminished after this, but did not entirely subside. This tumour was on the right side of the pelvis. From this time until the present pregnancy, she enjoyed variable health, sometimes better and at other times declining; but a tumour was always to be felt in the abdomen.

On the cessation of catamenia, at the commencement of the present pregnancy, the abdomen enlarged rapidly; so much so, that at the 4th month she was quite as large as women are ordinarily at the 8th month. There was severe pain, also, in the back and in the region of the tumour. When near the full period of utero gestation, she was so large that she thought, as did her friends, that she was pregnant with twins. Two weeks ago she was taken with labour pains, and sent for her physician, Dr. David McWhorter, of Pitcher, Chenango County; he made an examination, but the os uteri was so high that he could not reach it. Dr. Lyman Eldridge and Dr. John McWhorter, of Cincinnatus, were also called in consultation, neither of whom could discover the *os tincæ* by examination. After a while an anodyne was given, and the pains subsided, after existing severely for forty-eight hours. On the 8th, early in the morning, she was taken in labour. She called on Dr. David McWhorter. He made an early examination per vaginam, but could not reach the mouth of the womb. Some time after he was called, the membranes ruptured and a quantity of water came away. When the Dr. introduced his hand with great difficulty with a view of turning, and delivering by the feet, he found the os uteri high up and to the left side, dilated sufficiently to admit the hand, which he carried up to the shoulder of the child, when it came in contact with a hard, resisting substance, which he supposed was another fœtus, invested in its membranes. All his efforts would not enable him to pass his hand beyond this body, and after some time spent in fruitless attempts to accomplish delivery, he desisted, and sent for counsel. The two gentlemen who were formerly called, now were sent for, and each one made an attempt to turn the child, but with no better success. An attempt was then made to apply the forceps, but the head was so high, it being above the superior strait, that nothing could be accomplished in this way. It was then suggested that cephalotomy might be performed, but even this could not be done. All this time the pains kept up with great violence, until the evening of the 10th, when they subsided entirely, after they had continued nearly forty-eight hours without interruption. It was at this period that I was summoned.

When I arrived, I found the three medical gentlemen in attendance, upon this forlorn case. The patient desponding; wishes to be left to herself; dreads an examination. Great exhaustion; pulse 120, weak; countenance anxious, haggard, and sunken. Examination per vaginam—parts tender, inflamed, swollen, and fetid gas escapes every few minutes from the vagina, with a noise showing that decomposition is going on fast within the uterus. I could not reach the child by the finger, and the parts were so exquisitely tender that I forbore introducing the hand. She refuses absolutely to have any farther attempts made to deliver her.

From the known skill and tact of the gentlemen who had made the attempts at delivery, I was not disposed to make the trial myself; their opinions coincided that it would be impossible to deliver Mrs. K. by instruments, or the hand, by the vagina. What then was to be done? Abandon the case to nature, who was incompetent to save her; or trust to gastrotomy, with as little hope of success? She had mentioned her wishes several times to have an operation performed; but on talking the matter over among ourselves, we were unanimously of the opinion that it would be useless at this late hour. She was fast sinking; signs of gangrene were already present, and life was fast ebbing away. When some one told her we were talking over the propriety of the operation, she became very anxious to have it done without delay. We stated to her the almost complete hopelessness of her case; that the operation would probably hasten the fatal catastrophe, by its shock upon the system. But to all these she interposed the *certainty* of a fatal termination if left to herself, with no chance for life, but the unaided efforts of nature. In this dilemma, the question arose whether it was not our duty to perform the operation of gastrotomy. We at once made the necessary preparations, which occupied but a few minutes. A small dose of morphia was given her. She was placed in a recumbent position on the bed, and I commenced the incision on the linea alba a little below the umbilicus, and carried it down to near the pubis. The first incision was through the skin, down to the facia; then through the facia and tendons of the muscles to the peritoneum, when a small opening was made into it, and enlarged to the extent of the original incision. The uterus appeared of a dark chocolate colour, lying far to the right side. An incision was now made into it, to the extent of perhaps eight inches; its walls were nearly half an inch in thickness, and parted under the knife as though partially disorganized. In fact the fibres parted in some measure before the knife divided them. The child was found with its occiput towards the right sacro-iliac symphysis, but above the superior strait. It was entirely within the uterus, and a tumour, as large as the fœtal head at full time, occupying the right side of the pelvis, and pushing the head on the left side of the pelvis, and completely preventing its descent into the cavity. This tumour was of a firm consistence, apparently of a fibrous character, and so situated as to partially fill the pelvic cavity, pushing the uterus to the opposite side, and, when the uterus contracted, forcing the head against the brim of the pelvis, where it was arrested. There was a portion of the uterus nearly cut through by the pressure of the fœtal head against the sharp ridge at the brim of the pelvis. There was nothing but the peritoneal coat left, and that was very thin for several inches in extent. The child was of large size, and had been dead several hours. There was no difficulty in extracting it. The placenta was lying loose within the cavity of the uterus, but no hemorrhage of any amount had occurred. The whole being extracted, the uterus was carefully sponged out, and the wound united with the interrupted sutures; adhesive plasters, and a broad bandage were applied. So far the patient bore the operation with the greatest firmness; not a groan or a complaint was uttered during its performance; on the contrary she expressed herself greatly relieved, remarking that she suffered but little, compared with her pains and distress previously borne. Her pulse was more calm and less frequent, immediately following the operation, than for a few hours preceding it.

She continued in this state for a short time, perhaps an hour or more. We retired to another room, and were engaged in dining, when the nurse came to the door and informed us that the patient had fainted. We repaired to her, and found her perfectly dead. The nurse said that she saw no change until a minute or so before she died; when she remarked that it grew dark in the room, and observed that she felt faint, and the nurse gave her a little camphor and water; but it was the last she spoke, and immediately closed her eyes. The countenance became livid and pale, and she expired without a struggle.

Remarks.—I have been induced to publish an account of this case, first, on account of the rarity of the cause requiring it, and secondly, from the conviction that it is the duty of a surgeon to publish unsuccessful as freely and faithfully as he does the successful. This is a duty he owes the profession at large, and especially the younger members, who look to their senior brethren for examples. The faithful detail of cases of ruptured axillary artery, in reducing old dislocations of the shoulder joint, by Professor Gibson, of the University of Pennsylvania, has done more for the cause of surgery and humanity than a report of fifty successful cases would have done. We are not to conclude that unfortunate cases have not happened, because they are not spread on the records of the medical literature of the day. That shrinking from responsibility, that fear of being censured by criticism, too often leads the surgeon to withhold his unfortunate cases from the public, and he more easily excuses himself from the task, as it is rarely he has a precedent to follow.

It may be well to analyze this case a little, and inquire what was the cause of the impediment to delivery? and, likewise, what was the immediate cause of death? In the first place, the tumour was so situated as to produce an obliquity of the uterus, pushing the fœtal head out of the axis of labour, throwing the head of the child far to the left side, and forcing its head against the brim of the pelvis. The uterus did not descend into the pelvic cavity, but rested above the superior strait, with the head of the fœtus pressing it against the bone to that degree as almost to part its fibres. Uterine inertia had taken place, and disorganization was nearly commencing. What was the immediate cause of death? We did not examine the patient after death; the friends were unwilling that it should be done.

It is possible that hemorrhage may have occurred, but there were no external signs of it, none by the vagina, and there was no distension of the abdomen to be discovered; still, as the uterus did not contract after the contents were removed, we might have inferred that hemorrhage would be likely to ensue. But there was no tendency to hemorrhage when the operation was performed. The placenta was detached, and had been for some hours, and yet no bleeding was present. When the uterine fibres were divided, no blood made its appearance, nor at any time while the wound in the abdomen was exposed. There was no effusion into the cavity of the abdomen. The liquor amnii was drained off long before the operation. The intestines were not troublesome during the operation; indeed, I did not see a single coil of intestine, as the assistants kept the walls of the abdomen closely applied to the uterus before and after the incisions were made; this they were directed to do, not only for the purpose of preventing blood from falling into the cavity of the abdomen, if there should be much lost, but also to prevent the intestines from being exposed to the air. My own opinion is that the powers of life in this patient were nearly exhausted, and that it only wanted this additional shock of the operation to carry her off at once. A few hours would have caused her to sink, without the operation.

Had she survived the operation, the tumour, in all probability, would have destroyed her. It was large, and extensive adhesions united it to the surrounding tissues, so that its removal would have been a serious proceeding.

Art. XV.—*Complete Inversion and Expulsion of the Uterus.* By Thomas H. Yardley, M.D., Consulting Physician to the Lying-in Department of the Northern Dispensary of Philadelphia, &c.

At five o'clock P. M., Jan. 5th, I found on my slate a message, requesting my immediate attendance on Mrs. H——, a lady whom I had engaged to attend in her accouchement. I hastened to her residence, where I learned she was alarmingly ill; that she had been delivered of the child for at least two hours; that the afterbirth had not yet come away, and that she had fainted repeatedly.

I found her lying across the foot of the bed, entirely pulseless, skin cold and clammy, and her voice nearly inaudible. Her attendants were in great consternation, and one of them sat at the foot of the bed, holding on to the cord, for the purpose, as she said, of preventing it from "going up." I directed some brandy and water to be given her immediately, and on passing my finger along the cord, I came in contact with a large solid body, which I at first thought was another fœtus protruding from the vagina; but a very slight examination satisfied me it was the placenta, attached to the inverted uterus, which had passed entirely out of the vulva.

I immediately separated the placenta, which was very slightly adherent, and then placing my fingers in a conical position, I pressed them against the middle of the inverted uterus, and returned it to its proper position with facility. Another difficulty now presented itself: the uterus did not manifest the slightest disposition to contract, and was so flaccid that I felt satisfied it would not retain its position if I withdrew my hand; I therefore kept it in the cavity of the uterus, and gently irritated its internal surface. The hemorrhage was very slight; but the patient was already pulseless, and the attendants so much alarmed as to afford very little assistance.

I directed stimulating frictions to be made to the extremities, and sent one messenger for my friend Dr. Janney, and another for some vinous tincture of ergot, which I gave in doses of a teaspoonful every ten minutes, with a tablespoonful of brandy and water.

I retained my hand in the uterus half an hour before I felt the slightest contractions; they then came on, at short intervals, with increasing strength; and, after Dr. Janney arrived, we considered it safe to withdraw my hand. Dr. Janney placed his hand on the abdomen, and satisfied himself that the uterus continued to contract; the patient, however, continued so ill, that he gave me his valuable assistance for two hours, during which time we plied her freely with brandy, camphor, carbonate of ammonia, and other stimulants, and applied cloths wrung out of hot capsicum and turpentine to her extremities. Under this treatment, she gradually rallied; but it was not till after midnight that I considered her sufficiently revived to leave her.

Her convalescence was tedious, but perfect; and the child did well, though there was not the slightest secretion of milk.

I am aware that many authors of merit recommend that the uterus should be reverted before the placenta is detached; and this is no doubt proper practice where the uterus is within the vagina. But where an unusually large placenta, as in this case, has passed entirely out of the os externum, I think it would be a difficult task to force it back again, and further, as I doubt the propriety of making the attempt, particularly as I am not aware of any evil having resulted from first separating the placenta; and in many cases in which it has been attempted to replace the uterus with the adherent placenta, it was found impossible to succeed. Professor Meigs, in his recent work on obstetrics, records a case in which both he and the late Professor James tried without effect—and I am sure that no one acquainted with these gentlemen could doubt their skill and perseverance;—but they were compelled to detach the placenta before they could replace the uterus.

What influence traction of the cord had in this case, I am unable to determine. The patient was an exceedingly delicate woman; this was her second accouchement, and she had recently undergone much bodily fatigue, and mental anxiety and depression, in consequence of the illness of her husband, who had died a few weeks previously of phthisis. She had taken a dose of oil in the morning, which operated freely, and so rapid was her labour, that she had barely time to get on the bed before the child was born.

ART. XVI.—*Two Cases of Spontaneous Luxation of the Hip Joint.* By HENRY A. RAMSAY, M.D., Raysville, Ga.

I AM aware that luxation of the hip joint spontaneously is not without precedent; but the following cases offer some points of departure from the general course of such accidents, which have induced me to present them in a succinct form before the profession. Both of the following cases occurred in the same family, and were of peculiar interest to me, notwithstanding they produced painful impressions, owing to their intractability and utter hopelessness of relief.

The *first case* was in a small lad, six years of age; his temperament was phlegmatic, his muscles soft and flabby; his health was not greatly impaired until within a few weeks previous to his demise. His father died with consumption; his mother is a hale, hearty woman, and not predisposed to any scrofulous disease. When he was about four years of age, his parotids were tumefied, as I was informed; he was supposed to be scrofulous by the physician who then attended him; I learn that he had some ulcerations of that character; he, however, recovered from these, and seemed to be in very good health up to the month of January, 1847. About this period, without complaining of any pain, or without any symptoms of previous swelling or ulceration about the joint, he began to limp. I was called in a few weeks subsequent. I found him running to and fro about the house, quite *lively, cheerful,* and *playful;* he was limping very considerably, but had no expression of pain, nor did his countenance exhibit any. Upon a minute examination of the joint, I found no tenderness upon pressure, and but little upon rotation; there was no swelling of the inguinal glands, nor was there any wasting of the nates. The limb was very considerably shorter than the other; the toes rested upon the instep of the opposite foot; the heel was elevated, the knee turned inwards, and the head of the bone could be distinctly felt upon the dorsum of the ilium. The patient continued in this situation for several months, running about the yard, playing with the other children, until a few weeks prior to his decease. During the time, his grandfather, on account of his entire freedom from pain, or restraint in getting about, became very solicitous for its reduction. But, as I was sure it was dependent upon some scrofulous disposition, I gave my decided opinion against it. The old gentleman, however, desired me to consult Professor Ford relative to it. I did so, and he concurred; several other physicians were consulted, and all with the same success.

The little patient continued to associate with his playfellows as usual, until the fall of 1847, when he was attacked with intermittent fever; his knee began to pain him, particularly at night; his limb began to waste; his general system deteriorated; he lingered for a few weeks in intense agony, from which no remedy seemed to relieve him, until death interposed its power.

The *second case* was a little negress, now living, aged five years, who was attacked last spring with measles. Some eight weeks after her convalescence, she was observed to limp in walking, and that, too, without any premonition, as the family informed me. I was called. An examination of the limb developed a complete dislocation of the femur, upwards and backwards, upon the dorsum of the ilium. This patient continued to play about for several weeks; at length she complained of pain in the knee at night, gradually grew worse, until she was confined to the house. Recently, some swelling has appeared about the joint, and tended speedily to ulceration; under a course of treatment, however, the swelling subsided, and when I last saw the patient, a few weeks since, she was walking with the assistance of a stick.

No other ulcerations of a scrofulous character have presented themselves at any time upon this patient since having measles.

These cases seem to me to present the following unusual points:—

1*st*. The absence of pain in both cases, prior to, and subsequent to, the luxation.

2*d*. The apparent absence of an ulceration of the cartilages, which usually precede, or furnish a cause for, such dislocations.

3*d*. The ability of the patients to sport and play during the existence of the luxation, with an entire immunity from pain till within a short period of death or confinement!

In conclusion, what caused the dislocations? I am inclined to think that all the circumstances justify the conclusion that it was a deposition of *callus* in the acetabulum. This is merely an opinion, founded upon analogous circumstances; and as such, I throw it out for what it is worth.

LINCOLN COUNTY, GA., *April* 18*th*, 1849.

REVIEWS.

Art. XVII.—*Practical Treatise on Ventilation.* By Morril Wyman. 12mo. pp. 404. Boston: Jas. Munroe & Co., 1846.

Report of a Committee of the American Academy of Arts and Sciences on Ventilation and Chimney-tops. 8vo. pp. 28. Cambridge: Metcalf & Co., 1848.

Practical Methods of Ventilating Buildings. By Luther V. Bell, M.D., LL.D., Honorary Member of the New York State Medical Society, etc., Physician and Superintendent of the McLean Asylum for the Insane—a department of the Massachusetts General Hospital. 8vo. pp. 131. Boston: Damrell & Moore, 1848.

Ventilation of School-Houses of the City of Boston. Report of Committee. 8vo. pp. 43. Boston: J. H. Eastburn, 1848.

Ventilation Illustrated: a Tract for the Schools of Rich and Poor. 12mo. pp. 36; second edition. London: John Churchill, 1848.

Uses and Abuses of Air: showing its Influence in Sustaining Life and Producing Disease; with Remarks on the Ventilation of Houses. Parts I. and II.; 12mo. pp. 144. New York: J. S. Redfield, 1848.

This long list of works on the subject of ventilation, most of them published within the last year, and all of them within two years, shows a very great increase of interest in, and of attention to, this subject. They are indications of the interest which some scientific and charitable societies, and some public authorities, have felt in this matter, and of the efforts which they have made to call the attention of the people to it; for they all emanate from, or come to, the world through some such public authority.

The Boylston Medical Committee, of Harvard University, proposed the subject of ventilation of hospitals, churches, public halls, dwelling-houses, shops, &c., as one of the subjects for a prize dissertation. Dr. Wyman was the successful competitor; and the work now before us is his dissertation, enlarged and adapted to public use.

In 1847, Dr. Bell was appointed to deliver the address before the Massachusetts Medical Society, at their next annual meeting. He selected ventilation of buildings for his subject; and in May last delivered the address which we now have in the volume before us, published by the Society in their transactions.

In 1847, the Boston School Committee appointed a sub-committee to inquire into the possibility and means of ventilating the city school-houses. Henry G. Clark, M. D., was at the head of this committee, and to him are we indebted for the valuable tract before us.

The American Academy of Arts and Sciences appointed a committee to inquire into the practical value of the various kinds of ventilators and chimney-tops. Dr. Wyman, one of this committee, subjected these various instruments to the test of experiment, and made the above report, which is published among the Society's transactions.

An association of gentlemen in New York proposed to publish a series of works called "Tracts for the People," in which they intend "to discuss the application of Christianity to the institutions, classes, and social economy of large communities." These tracts, Nos. I. and II., are Parts I. and II. of the Treatise on the Uses and Abuses of Air. No author's name is affixed to this work; but we may venture to impute its paternity to a writer of authority in matters of hygiene.

"The Samaritan Fund Committee of the St. George's and St. James's Dispensary," London, in order to encourage the introduction of ventilation into the houses of the working classes, issued their tract, as above described; "and, by thus diffusing information on this important subject of ventilation, they hope to create a want for it among all classes of the community, and especially among the poor, who suffer so much disease from continually breathing the impure air of close and confined apartments." No author's name is given, nor have we any means of knowing the names of the Samaritan Fund Committee, who are responsible for its authority, except that Joseph Toynbee, F. R. S., the eminent and philanthropic surgeon, is the honorary secretary, whose name is sufficient guarantee that it came from proper authority.

Besides these works, we frequently meet with articles in newspapers and magazines upon ventilation. The works of general hygiene and of popular physiology treat of this subject among others connected with their general purpose. Lyceum lecturers, and those itinerant instructors of the people who show the human structure, and explain the laws of bodily action and of health, include this in the course of their public teachings.

All these show that this subject, the use of air in the animal economy, and the necessity of frequent supplies of this element, is becoming one of general interest, and that it has now entered, at least, upon the high road to popular appreciation and acceptance.

All the works which we have enumerated in the beginning of our article are good in their way, and though, with the exception of the first, Dr. Wyman's book, none pretend to be perfect treatises upon ventilation, yet each one has a single and definite purpose to fulfil, which it has faithfully accomplished. Each of these works may therefore be considered as valuable additions to popular science, or useful channels through which science, in some of its principles or applications, has been carried, or is now going, to the people.

Dr. Wyman's work is a full treatise upon the whole subject of ventilation in all its varieties and means, and also touches indirectly upon the subject of warming. But the full consideration of this last topic, for want of room in the present work, is postponed—we trust, to be resumed, and the result given to the world, at Dr. Wyman's future leisure. Dr. Wyman's plan is best described in his own words:—

"First, to describe the laws and properties of gases generally; especially the laws of their diffusion, so important in its influence upon ventilation.

"Secondly, the chemical and physical properties of the atmosphere.

"Thirdly, the processes by which atmospheric air may become vitiated; particularly the processes of respiration and combustion, and the nature of the gases produced by them.

"Fourthly, the means by which impurities, whether chemical or mechanical, may be removed from atmospheric air.

"Fifthly, the principles of the movements induced in air by heat, especially those occurring in apartments and in chimneys.

"Sixthly, the moving power best adapted to ventilation, and the quantity and qualities of the air which should be supplied.

"Lastly, the mechanical arrangements best adapted to effect the ventilation of the various structures to which they are applied."

Dr. Wyman begins with the first principles, and describes the air, its composition, and its chemical connection with animal and vegetable life, and shows the reciprocal services performed by plants and animals—in the supply of oxygen by the former for animal respiration, and the supply of carbonic acid by the latter for the support of vegetables.

Dr. Wyman, quoting Mr. Dalton, shows that gases tend to intermix, and that, however different their nature, when two of them are placed in contact, they become as one body. Thus, one vessel filled with hydrogen was placed two or three feet above a similar vessel, which was filled with carbonic acid gas. A small tube connected these two vessels. "In the course of a few hours, hydrogen," although it was much the lighter substance, "was detected in the lower vessel; and carbonic acid," which was much the heavier gas, was detected "in the upper; after a still longer time, these gases were found perfectly and equally mixed" in each of these two vessels, thus separated.

Upon this principle, the carbonic acid gas which passes from the lungs in expiration does not fall to the floor by force of its own superior weight, but is diffused through the air of the room, and rises at first toward the ceiling with the warmer and lighter air and vapour that come from the lungs. Consequently, the ventilating flues, which carry the foul air away from an apartment, may open at the lower or the upper side of the room.

The physical properties of the atmospheric air, its weight and motion, winds, moisture in the air, clouds, electricity, and the relation of these to animals, are described at length in an entire chapter.

Dr. W. explains as much of the anatomy and physiology of respiration, the relation of the air to the blood, and of the changes effected in both the blood and the air by being brought into contact in the lungs, as is necessary to convey a general understanding of his main subject, and to show the constant necessity of fresh air for respiration, and the means of obtaining a continued supply in all inhabited apartments.

All artificial lighting is produced at the expense of the purity of the air. In the combustion of oil, tallow, gas, wax, &c., oxygen is consumed, and carbonic acid and water are produced, and thus the air is vitiated. Ventilation cannot be perfect, unless these effects are taken into consideration, and fresh air provided for the candles, lamps, and gas burners, as well as for the lungs, and the products of combustion, as well as those of respiration, removed.

Chapters VI. and VII. treat of all the various forms of vitiated air to which men may be exposed, and describe the effects on health and life from carbonic acid, carbonic oxide, sulphuretted hydrogen, sulphurous acid gas, chlorine, miasma, smoke, dust, and other mechanical impurities in the air. The means of removing these impurities, and of preventing their effect upon the animal constitution, are described in the next chapter. Ammonia, the common emanation from diseased bodies, may be neutralized by evaporating acids in the room. Hence we see the propriety of the frequent practice of pouring vinegar on a hot iron in the chambers of the sick. Carbonic acid may be removed by caustic earth or lime in the form of whitewash. For this purpose, lime must be fresh, as old lime is presumed to have already absorbed carbonic acid to its full capacity. Rooms, therefore, need frequent white-washing. Sulphurous acid is absorbed in large quantities by water. Sprinkling the floor answers this purpose. Chlorine acts as a very powerful disinfecting agent by combining with, or decomposing, the fetid gases, and neutralizing them.

It has been long a desideratum to find some means to be relieved of the smoke of chimneys. "The term smoke, applied in common language to any sooty exhalation or steam, includes a great number of products, ever varying according to the nature of the materials from which it proceeds, and the manner in which these materials are subjected to the action of heat and air, and mingled with other substances.

"*Black smoke* consists essentially of carbon, separated by heat from coal or other substances, with carbonic acid and carbonic oxide; if the heat accompanying its production is great, the carbon forms a very loose and powdery soot; if less, the larger amount of the following substances: carbon, water, resin, oily and inflammable products of various volatilities, ammonia, carbonate of ammonia."—*Wyman's Treatise*, p. 91.

The smoke of bituminous coal is black, and contains sulphuretted hydrogen; and, when the draught is powerful, minute fragments of coal are separated and carried out with it. The smoke of wood contains water, carbonic acid, and pyroligneous acid. This last "acid produces the irritated and inflamed state of the eyes when exposed to smoke. In cold weather, especially, when this acid is formed in *air-tight stoves*, at a low temperature, it is condensed upon the bricks of the chimney, and, uniting with the lime, forms an acetate of lime, which is soluble in water, and, being gradually removed by the rain, nothing remains between the bricks but sand."—*Wyman's Treatise*, p. 93.

The smoke, unless carried away and diluted in the upper regions of the atmosphere, or consumed, is, at all times, injurious to health. When bituminous coal is consumed, and especially for manufacturing purposes, as in furnaces, and even for ordinary fires of houses, shops, &c., the black flakes of soot pass off from the chimneys and float in the atmosphere. This matter then falls upon the roofs of buildings, and on everything else that is exposed to it. It enters houses, covers furniture, and soils clothing. In places where this coal constitutes the principal, or the only fuel, as at Pittsburgh, Cincinnati, Wheeling, or Louisville, &c., the whole atmosphere is very sooty, and everything is subjected to its influence. The rain-water that is caught from the roofs, especially after an interval of dry weather, is very black, so that it is impossible to wash linen perfectly white with it.

"Over London, in calm weather, the smoke hangs like a cloud, and when there is a wind, it is drawn by it into a stream extending twenty or thirty miles from the city."—*Wyman's Treatise*, p. 91. And wherever this soot is carried in the atmosphere, it enters the nostrils and penetrates the lungs, and it must irritate more or less the delicate mucous membrane of the air passages.

The soot, metallic vapours, and other sublimated matters of smoke, can be precipitated by sending the column of smoke through an artificial shower of water, which takes up all these offensive impurities. This process of cleansing smoke may be made a matter of economy, as well as of health and comfort. One witness states that, "by this arrangement, he was able to save in the form of lamp-black about one-twentieth part by weight of the coal consumed."—*Wyman's Treatise*, p. 102.

A great many plans have been invented for the combustion of smoke; but those only are successful which admit a certain portion of air, heated to a proper temperature, to the column of smoke, after it has passed from the fire. In combustion of fire, most of the carbon and hydrogen unite immediately with oxygen, and form carbonic acid and water; the rest passes off with the smoke; but if, immediately after passing from the fire, they come in contact with more oxygen which is heated, they are consumed.

Admitting the necessity of pure air for health, it can hardly be doubted, that no one should be suffered to throw smoke or other impurities upon the atmosphere we breathe. Dr. Wyman "questions whether any manufacturer or corporation should be allowed to produce such an amount of evil" as arises from smoke and soot, "while ways exist of effectually preventing it."—*Treatise*, p. 91. The question applies equally well to all the manufacturing or chemical processes which send forth noisome emanations, gases, or dust. These are public nuisances, and ought to be prohibited by public authority. The noxious emanations from the drains and sewers of cities, loaded with the destructive sulphuretted hydrogen gases, certainly come under the cognizance of public authority. But, in most cases, and, we fear, almost universally, they are allowed to flow forth from the vent-holes of the sewers, and to spread themselves in their neighbourhoods, to offend and injure all who are compelled to breathe them.

It is somewhat singular that city governments, while they are so careful to drain all the waste and foul fluids from their streets and houses, should not also feel the obligation to prevent or remove the gaseous emanations from those drains, because these are equally destructive of the health of the people, and even more injurious to the property in their vicinity.

It was our original purpose to speak of internal ventilation, or that of houses, halls, shops, &c., rather than of external ventilation, or that of streets, towns, &c. We therefore return to a consideration of the necessity of fresh air, and the means of supplying it to all the rooms which are occupied by human beings.

A certain portion of the oxygen of the air is consumed at every inspiration, and the unconsumed air is returned from the lungs, in connection with carbon and hydrogen, in the form of carbonic acid gas and vapour. Oxygen, in these new combinations, cannot serve the purpose of respiration. Air, then, which has passed into and out of the lungs, has not only lost a part of its life-giving oxygen, but is loaded with gases that are injurious to life.

Only about one-quarter of the oxygen of the air which is inspired, is consumed by passing once into the lungs. But this respired air, having only fifteen or sixteen per cent. of oxygen, cannot so well purify the blood as that which has twenty or twenty-two per cent. of oxygen. Air, when weakened, is not so effective as when it is of full strength, and, therefore, it should not be breathed more than once.

Should the expired air be at once carried out of the apartment where it has been breathed, and its place supplied with pure air, and should the air of the room be corrupted by no emanations from the skin, &c., a person would need to be supplied with only about as much as he inhales eighteen or twenty times a minute, or about eight hundred cubic inches a minute. But, as the expired air, weakened by loss of its oxygen, and loaded with offensive and noxious vapours and gases, is diffused through the room, and mixed with the pure air, the whole is somewhat weakened and vitiated. It is therefore necessary to supply fresh air in much larger quantity than the amount that is actually inspired.

Upon the question of what quantity is necessary to be supplied, authors differ widely. Tredgold thinks four cubic feet per minute sufficient, while Dr. Reed sometimes supplies the House of Parliament with more than sixty feet per minute for every occupant. None will doubt that, in proportion as the air is pure, the respiration is perfect; and that, in proportion as the blood is relieved of its waste particles, and fitted to nourish the body, the tone of life is high, and all the functions, so far as the blood is concerned, are performed with ease and energy.

Taking these principles into consideration, and remembering that the expired air in any apartment mixes with that which is yet to be inspired, the sixty feet, given by Dr. Reed to the members of Parliament, are better than the four feet proposed by Mr. Tredgold. Dr. Reed says that, whenever less than this quantity was received, the difference was perceptible. But, unfortunately, the sensibilities of those who occupy a close room, become so dull from a deficiency of oxygen, that the foulness, and often the stench of the air which such persons breathe, are not perceived. We have frequently entered school-rooms in which the air was very offensive to our lungs, and yet those who had gradually become accustomed to this corruption and waste, did not complain of impure air, and sometimes they failed to perceive it. In such rooms the occupants can live, even without suffering pain; but their life is low, and their energies, both of mind and body, much reduced.

The only question in this matter should be, not with how little air one can barely retain life and even ease, but how much will increase his powers and elevate his tone of life.

Nevertheless, in the present state of architectural science, we do not expect that any arrangements will be made to supply, even to public assemblages of legislators, or to courts, a quantity of fresh air anything like that which the members of Parliament receive. So long as the questions relative to money and expense retain their present paramount importance over questions relative to life and health; so long as principles of economy are universally studied and followed, while the principles of physiology are generally unknown and disregarded, we have no reason to expect that more than ten cubic feet will be supplied per minute to each occupant of a room, even by the few who intend to produce what they deem a proper supply for themselves, their families, and workmen.

How due ventilation shall be effected; how foul air shall be carried away, and fresh air shall be supplied to apartments, are questions that have occupied most of the attention of writers on ventilation; and the descriptions of the various methods by which these objects are effected, fill the greater part of their books. More than two-thirds of Dr. Wyman's treatise is devoted to this topic.

Very few occupied apartments are ventilated at all; that is, there are no means designed and prepared for the admission of fresh, and the removal of foul air. If such rooms were air-tight, their occupants would suffocate. Fortunately, the imperfections of the builder compensate, in some measure, for the omission of the architect; because few rooms are made so tight as completely to prevent the ingress and egress of air.

Most rooms have a fireplace which serves as an outlet for foul air, and afford facilities, through undesigned crevices of the doors, windows, and walls, for the admission of fresh air. This unavoidable ventilation is generally sufficient; at least, it gives a tolerable atmosphere to the rooms, especially when the fireplace is so large as to carry off large volumes of air with the smoke.

But the introduction of stoves, by means of which the throat of the chimney is narrowed, and the draught hole in the stove door so diminished as to admit only sufficient air to support the combustion of the fuel, prevents the free escape of the foul air that would pass off through the open fireplace. The air-tight stove, especially, inasmuch as it is intended to admit only air sufficient to support combustion in the lowest possible degree, and to allow none to pass off with the smoke, presents a most effectual obstacle to ventilation. It is designed to warm only as many cubic feet of air as the room contains, with the addition of the small quantity that is needed to support the mere smouldering of fuel. It therefore prevents the escape of any warmed air, and provides for no loss of heat, except by radiation through the windows and walls of the room. The air-tight stove may be considered as a valuable invention for the economy of fuel; but for economy of health and strength and productive power, it is a most unfortunate invention, and ought never to be used by those who desire to sustain the highest measure of life. We are glad to see that the use of these stoves is diminishing; and that many of those who still retain them, use them as common draught stoves, thereby obviating, in part, at least, the objections which we have made to them.

Most rooms are ventilated, in the summer, by opening the windows. When the rooms are loosely built, and there is a powerful draught through the fireplace, there is a sufficient opportunity for the ingress and egress of air; and no farther ventilation is needed, while the fire is burning, in winter. But rooms heated by stoves need other means to carry off the foul air, even when the fire is burning; and, during a certain period of the autumn, and of the spring, when there is neither fire on the hearth, nor open windows, all rooms need special means of ventilation.

Perfect ventilation includes both the admission of fresh, and the removal of foul air. But most plans of ventilation include only one of these processes. Some houses receive a supply of fresh air through a furnace, and some have ventilating flues to carry off the vitiated air. In the former case, foul air is left to the chance of escaping from the rooms through accidental outlets, or unavoidable crevices, while fresh air enters through the same channels. Whenever fresh air is admitted by design, it is commonly, for the purpose of warming merely, through the furnaces, ventilating stoves, &c.

There are, however, two kinds of ventilation in use: one, called the vacuum ventilation, which draws the foul air out, and the other, called the plenum ventilation, which forces the fresh air in. The former is in much the most frequent use. In some buildings, both are combined, and, in this case, operate most successfully. Indeed, it is only when they are thus combined, or when some substitute is provided for the other, that either can operate with sufficient success.

A vacuum cannot be created in any room, and its air cannot be compressed. Foul air cannot be drawn out unless fresh air is admitted to take its place; neither can air be admitted through a furnace, or through any channel, unless that which is already in the apartment passes out.

We know of buildings so tightly built that little or no opportunity is left for the air either to enter or to escape. These buildings the owners attempt to warm with furnaces without success. The furnaces are well made, and adapted to their situations and purposes; their fires burn well, and there is sufficient open communication from without to the warm air chambers, and from these chambers to the apartments that are to be heated. But the air does not flow from the warm air chambers to these apartments, and for this plain reason, that these apartments are already filled with air, and can admit no more, unless some of that which is already there can escape; for this, there is no opportunity, either through any ventilating flues, or through any crevices of imperfect joiners' work. The opening of a flue through the upper ceiling would remedy the difficulty, and then the furnaces would work well, and supply the needful quantity of fresh and warm air.

On the other hand, some apartments, which are built with similar tightness, are furnished with ventilating flues; these are designed to carry off the foul air. But no foul air flows through these flues, because no provision is made for the admission of fresh air, nor any undesigned apertures left, through which it may find its way. As no vacuum can be created, these ventilators are useless.

A special apparatus is employed for plenum ventilation. Air is usually brought from without by means of a revolving cowl, which always presents its open mouth to the wind, and communicates by pipes with the apartments that are to be ventilated. The pressure of the wind, when in motion, forces the air into the room.

The same object is also effected by the revolving fan, which communicates at its axis with the external air, and from its circumference with the inside of the house. A familiar example of this fan is seen in the common winnowing mill, which is used to separate the chaff from grain after it is threshed. The fan consists merely of an axle, to which several flat pieces of board or leaves are attached, like the spokes of a wheel, having their surfaces parallel with the line of the axle. This fan is enclosed in a hollow, cylindrical box, which has only two apertures, one at the centre of its ends, or the axle of the fan, and the other at the circumference. When the fan revolves, its leaves drive the air outward from the circumference and through the aperture which is there made. This centrifugal force leaves a diminished pressure at the centre of the fan, and the air is then pressed in through the hole at the axle. Thus, there is a current of air created through this central aperture of the cylindrical box, and thence through the aperture at the circumference; and this current can thus be directed in any course through proper pipes. When the fan is in motion, the air is driven by the centrifugal force through the pipe that leads from the circumference, and its place is supplied by other air through the aperture at the axis, and thus a continual current of air is drawn in through the one, and forced out through the other. An air-pump of sufficient size is sometimes used to force the air into buildings. Both of these plans require a motive power to keep them in action; but this is very expensive, and, except in factories where it is created for some other purpose, generally unattainable. They, therefore, can never be brought into general use.

The most common means of supplying fresh air is the furnace, which answers the double purpose of warming and ventilating. By heating the air, it gives it a motive power, and causes it to ascend by means of its specific levity.

An objection to the common furnaces is, that they heat the air too much, and deprive it of its moisture. When the air is brought in contact with red-hot iron, or even in contact with that heated nearly, though not quite, to redness, it is rendered less comfortable to breathe, and less fit to effect the purposes of respiration. The apartment is not so well warmed, when the heat is thus concentrated in a small quantity of air, as when it is more diffused; and a much larger quantity of air, raised to a lower temperature, is sent into the room. In the former case, the heated air ascends directly through the register to the upper parts of the room; there a portion of it finds its way through the crevices, and the rest flows along the ceiling, and thence down the walls and the windows, where, becoming cooled, it falls towards the floor; the current then moves towards the register, whence it is again carried upward. Thus directly over the register, there is an ascending current of very hot, and sometimes intensely hot air, and at the sides of the register, a current of cooled air; therefore the room cannot be otherwise than comparatively slightly warmed.

This evil may be remedied by having the air heated, not by an iron pot filled with coals or flame, but by steam or hot water, and sent in large quantities, not through a single flue and aperture opening from the floor into the apartment, but through the lower part of the side walls, which may be pierced with a great many small holes. By this means, the air is not heated to a disagreeable degree, but only to a comfortable temperature, and it enters the room in such a manner that it gives the atmosphere, in every part, an agreeable and healthy warmth.

The air in inhabited rooms in the temperate and northern climates is necessarily made warmer, during most of the year, than the open air; and therefore tends to rise and escape through any aperture in the upper part of the rooms. Even in the same room, the warm air rises to the top; and, when not disturbed, it arranges itself in horizontal layers, the warmest being at the top, and the coolest at the bottom. Some observations are recorded in the *Annales d'Hygiène*, in regard to the temperature of a room twenty-one feet high which was heated by a stove. Thermometers were hung at intervals of about two feet, from the floor to the ceiling. These indicated successively the temperatures of 65°, 67°, 70°, 72°, 75°, 80°, 81°, 86°, 90°, 94°.

This specific levity of the air is generally relied on to create the vacuum ventilation, and carry the foul air from apartments. Many ventilators are, therefore, merely tubes leading from the upper part of the rooms upwards, and through the roof to the open air. When the internal air is warmer than the external air, there is a constant upward current through these flues, and this current moves with a rapidity proportionate to the difference between the external and internal temperatures. But when, in the summer, and in warm climates, the rooms are not warmed, and have the same temperature as the atmosphere without, there can be no upward current from this cause. In such cases, other means must be used to facilitate the passage of air out of inhabited apartments.

For this purpose, three forces are resorted to: the exhausting fan; heat in some form, applied to the air in the ventilating flue; and the moving current of air passing over the top of the ventilator.

The fan can be used by conducting the flue from the apartment to the central aperture near its axis; when the fan revolves, the air is thrown out from its circumference by the centrifugal force, and its place supplied by air of the room drawn in at its axis. This is a very effectual method of drawing air from any room; but as a constant power is required to keep the fan in motion, it is rarely used. It can never be extensively applied in dwellings and shops.

Heat may be easily applied directly to the ventilating flue. By warming the air within it, an upward current will be created. In some cases, all the flues in one house lead directly or indirectly to one larger tube, or chimney, in which a fire is kept burning. This causes an upward current, and a draught from below sufficient to draw the air through all these channels, and to carry off the foul air from the rooms with which they are connected. This fire is generally placed in the flue at the attic, or upper chamber; and in this position, it works with the least trouble and best results. Sometimes it is placed at the bottom of a flue on the ground; and the flues from the various rooms, turning downward, open into it.

It is not convenient, nor do we suppose it will ordinarily be considered practicable, in common dwelling-houses, to adopt either of these plans. Either would involve more expense, both of original construction and of subsequent maintenance, than people—even those who admit the necessity of ventilation—are usually willing to bear.

This difficulty might be obviated, in part at least, by having the ventilating flues connected with, or made in the chimney immediately contiguous to, the fire and smoke flues. This is applicable to rooms used, in the winter, only during daytime. The heat of the fire and smoke would warm the air of the ventilating flue sufficiently to create an ascending current and a draught from the room, while the fire is burning. But in the night, when there is no fire, this means would fail; and sleeping chambers, which need purification even more than rooms occupied during the day, cannot thus be ventilated.

An Argand lamp, burning in the ventilating flue, will produce sufficient draught, in most cases, to ventilate a single room, if it is occupied only by a few persons. But when the room is large, and filled with many occupants, it is to be feared, with reason, that this means will not create a current sufficient to carry off all the foul air as fast as it is generated.

A very easy and cheap method of ventilation by means of the heated current, is to open a passage from the room directly into the chimney, above the fireplace, and to place in this hole a tube with an arm several feet long, turning upwards in the smoke flue. This, being heated by the smoke and fire, creates an upward current and a draught from the room, though not so strong and effective as in the longer flue, which extends from the room quite to the outward air.

The currents of the external air, or the wind, is the moving force, whose aid is most commonly depended upon in the ventilation of buildings. This is used on the principle that one current of air carries with it, or absorbs, other air with which it comes in contact. Thus, a current passing over a chimney top, or the open end of a ventilator, takes up and carries along with it the upper stratum of air in its flue; by creating a vacuum, or by diminishing the atmospheric pressure in its upper part, it causes an upward current from below, and thus a draught is established or increased through the chimney and ventilator.

To effect this purpose, a great variety of forms of ventilators and chimney-tops have been invented. All have a tube, or flue, through which the smoke from the fire, or the air from the rooms, ascends; but they have tops or caps of various forms and structure, to allow the external horizontal currents to strike most favourably upon the ascending internal currents, and aid their passage outward most effectually.

Espy's ventilator consists mainly of a vertical cylinder or ascending pipe, and a hollow cone, with a closed apex and open base, placed horizontally on its top. The cone stands and revolves horizontally upon a vertical shaft or pin, which rises from the middle of the ascending pipe.

The upper end of the vertical pipe does not open directly into the air, but passes through a hole in the under side of the cone, so that all the smoke from the chimney, or all the air from the ventilating flue, goes from the ascending pipe into the hollow cone, and through its open and larger end to the external air. The revolving cone is supplied with a vane, so that it always stands in the direction of the wind, presenting its closed apex to the windward, and its open base to the leeward.

When the atmospheric current strikes upon this cone, it is divided at the apex, and follows the spreading sides; having passed these sides, it continues in the same direction. In this way it leaves a vacuum, or, at least, a diminished pressure of air in the space immediately at the leeward of the base. The air from within the cone and the vertical pipe rushes into this space, and is thence carried away with the wind, and thus an upward current is created.

A more simple plan, and one much less liable to get out of order, is that of Mr. Emerson, of Boston. This consists of the upright cylindrical flue, or shaft, which is surrounded at the top by the hollow section of a truncated cone. The diameter of the smaller end of this section is the same as the diameter of the upright flue, and the circumference of this smaller end is placed uppermost, and attached to the circumference of the flue. The larger end of the cone is downward, so that the sides of the section spread outward and downward. When the air is moving, that stratum which strikes against the sides of the cone is directed upward on its inclined plane, and, continuing in the same direction, it passes over the open mouth of the vertical tube, and leaves a vacuum, or a space, of less compression between its current and the mouth. This produces the same effect on the air in the flue or chimney, and causes a draught through them in the same manner as Espy's ventilator.

To prevent downward currents from the atmosphere, a cap is placed several inches above the top of this open mouth, supported by several iron rods sufficiently strong to sustain it, but not large enough to interfere with the wind. Its diameter is about the same as that of the larger end of the truncated cone, or nearly twice as large as the diameter of the main ventilating tube or chimney flue.

This ventilator is made in such accordance with the principles of natural philosophy, that its form has suggested itself to several persons who were studying the subject of ventilation in various countries and at different periods. Count Cisalpin, in France, invented it more than seventy years ago. It was again brought forward by St. Martin, a French naval officer; and within two years, it was brought into use once more by Mr. Frederic Emerson, in Boston, and is now extensively used in that city and its neighbourhood. Dr. Bell says, "that most of these ventilators have been invented and re-invented every few years."—*On Ventilating Buildings*, p. 73.

This ventilator is improved by spreading the mouth of the flue so as to give it a conical form, or by placing on its top a hollow truncated cone, the smaller diameter of which is the same as that of the other cone and of the cylindrical flue. In this case, the end of the cylindrical flue and the smaller bases of the truncated cones are of the same size, and are joined together; the lower cone spreads downward and outward, while the upper cone spreads upward and outward. The height of the upper cone, and consequently its longer diameter, are much less than those of the lower cone.

There are many other forms of ventilators, but all depend on the principle that "air in motion communicates motion to those portions of air at rest in its immediate vicinity," and that when air in motion strikes upon any object, its current is divided, and leaves a space of diminished pressure on the opposite or leeward side of the object. When the wind passes over the open mouth of the ventilator or chimney, its current communicates motion to the air within these tubes, and causes a current upwards; and if an ascending current is already in the tubes, but less rapid than the wind, it is increased.

When the tops of ventilating tubes or chimneys are surrounded by a cone, or a plane inclining downward and outward from the upper edge of the tube, the stratum of moving air, that would otherwise strike directly against the upper part of the tube, strikes against this inclined plane or cone, and is turned upward and over the open mouth, leaving a space of diminished pressure between itself and the tube. The air is thus pressed upward to fill this rarer space, and then a more rapid upward current is created through the tube.

The committee of the American Academy submitted all or most of the various forms of ventilators to the test of rigid experiment, and ascertained their effect upon a current of air in a tube, on the end of which they were successively placed. Dr. Wyman took a long pipe, which represented the smoke or ventilating flue, and, by means of a revolving fan, he created a current of air through the tube from its circumference: this current represented the wind. The end of the long pipe was placed in the mouth of the fan tube, and at right angles to it; the open end of the former was in the middle of the mouth of the latter, so that the current from the fan, or the wind, struck perpendicularly upon the pipe or ventilating flue, and a part of this current passed over its mouth. By means of this apparatus, Dr. Wyman was enabled to throw a current of air, with a regular and determined velocity, through the fan tube upon the end of the long pipe; and by other means, he was able to measure the velocity of the current that was induced through the long pipe. Models of the several kinds of ventilators were placed successively upon the end of the long pipe, and each one was exposed to the wind from the fan. The various velocities of the current, thus induced through the long pipe, when the different ventilators were placed upon it, were taken as the measures of the power of their several ventilators in creating a draught through any chimney or flue.

The principles on which these experiments were made, and the details of the several processes, are described in the published Report of the Academy, and thus we have the record of the efficiency of the various kinds of ventilators. In all these experiments, the current from the fan, or the wind, was the same; the only difference was in the velocity of the current through the long pipe or the ventilating flue.

The rate of the current through the long, or ventilating tube, when capped with Espy's ventilator, was 1.29 feet per second; with Emerson's ventilator, the side of the cone having an inclination of 45° to the base,* 1.61 feet per second; with the same, having an inverted section of a cone above, as before described, and the sides of the lower cone having an inclination of 52° to the base, 2.16 feet per second. Dr. Wyman says, "This is one of the most efficient fixed ventilators with a cap which have been examined by the committee."—*Report to the Academy*, p. 13.

We have not space, nor would it be useful, to describe all the ventilators which were thus tested by this committee of the Academy. Suffice it to say, that those we have mentioned are the best, and in most general use. But to those who wish to pursue the matter farther, we commend the Report of the Academy.

Dr. Bell's work, being simply an address, does not cover the whole ground of the various plans of ventilating and warming. Its sole object is to explain the leading principles, and to show some of the best practical methods, of ventilation; it is therefore limited in its descriptions. Preliminary to the main subject, Dr. Bell considers the hygienic influence of foul and pure air, and shows the serious results which inattention to proper means of purification produces, as well as the advantages which result from a due appreciation of its importance. Dr. B. justly and eloquently deplores the general neglect of ventilation, and attributes it to the true cause—the general ignorance of the necessity of fresh air in all apartments that are occupied by breathing beings, and the consequent omission of all provision for the supply of pure air. Our whole system of architecture for public and for private purposes, for churches, factories, dwellings, and shops, however much improved in elegance and convenience, has not admitted the necessity of ventilation even as a general law. It is occasionally admitted. Some churches, school-houses, public halls, court-rooms, and a few dwelling-houses, are ventilated. Some factories of the most recent structure, a very few jails, and, rarely, a workshop, are provided with means, to a greater or less extent, for the admission of fresh, and the removal of foul air. But scarcely any private dwellings, parlours, lodging rooms, or kitchens; scarcely any places, whether public or private, in which men and women stay, for business, for study, for domestic occupation, or for enjoyment, are provided with means for the supply of pure air.

---

* The dimensions of the original of this model: Diameter of the flue, 18 inches; of the cone at the larger and lower base, 3 feet 6 inches; of the plate, 3 ft. 6 inches; height of the cone, 12 inches; height of the plate above the top of the cone, 9 inches; thickness of the plate, 1½ inch.—Note to *Report to the Academy*, p. 17.

Dr. Bell, in a single paragraph, shows how strikingly this neglect of what is necessary to support life is combined with the power and willingness to provide everything else. "A few men of giant energies, of boundless faith, of far-seeing calculation, sit down in the counting-rooms of this city, with a surveyor's sketch, and a few engineers' levels. They decide that a town shall be built—a manufacturing city erected. Straightway, and almost like the changing scenes of the theatre, huge brick palaces arise, streets in long perspective of shops, schools, houses, side-walks, begin to stretch themselves out from a thousand nuclei, to meet the new formed elements in exact symmetry, like the points of ossification in the growing embryo. Churches point their spires to the skies in all the beauty of Gothic tracery, or plant their firm columns of stone in all the solidity of Grecian art. In short, what the conquerors of the world have been lives and centuries in designing and accomplishing, is called into existence by our merchant princes, almost with the wave of Prospero's wand!"—*On Ventilating Buildings*, p. 18.

In these and other cities, almost everything is provided but fresh air. The people have sufficient food, heat and clothing, while the labour of operatives is amply remunerated; but economy in air is carried to an extent which, if applied to food, would be called meanness. We have obtained the size of the rooms of several boarding-houses in some of the manufacturing establishments. These differ among themselves, but there is generally an unhealthful economy of space, both in the rooms which are occupied for sleeping apartments at night, and in those which are used as dining and sitting rooms by the operatives during the day. One chamber, with 262½ cubic feet of air, is occupied by two lodgers. Another, with 500 feet, has four lodgers; and an attic, with 769 feet, has six lodgers. Some portions of this space are occupied by beds, trunks, and other furniture; but making no deduction for them, the occupants of these rooms respectively have each 131, 125, and 128 feet of air for the whole night. In other rooms, two lodgers have 385 feet; four have 778 feet; two 450; eight 2137; four 1080; eight 2577; four 1414; four 1800; four 1803; and two 990 feet. These are more liberally supplied. But even the best affords only 495 feet of air for each person, which is but a pittance compared with what these lodgers need for their respiration. Taking Tredgold's, the lowest estimate of the quantity of air which is necessary to support respiration, each person consumes four feet every minute. Upon this estimate, the best of these rooms has a supply of air sufficient to last its occupants one hundred and twenty-four minutes, and the worst enough for thirty-one minutes. But, according to the better estimate of Dr. Reid, they have only air enough to support their respiration thirteen minutes in the most crowded, and fifty minutes in the most favourable rooms.

These persons are supposed to remain in their chambers seven to eight hours, and some even longer. Notwithstanding the limited supply of air in these rooms, and the number of occupants, no means are provided for ventilation. If the rooms were as air-tight as they were intended to be, suffocation must take place in all, the best as well as the worst, with the only difference that this event would happen earlier in some cases than in others. Happily for the lives of these lodgers, it is almost impossible to make a room so tight as to prevent entirely the passage of air through its walls, windows, and doors;

the imperfection of the joiner's work thus, in some degree, compensates for the imperfections of the architect's plans.

The day rooms of these boarding-houses are no better; and when most crowded, they are even worse than the lodging rooms. One room, which is occupied as an eating and sitting room by twenty-five boarders, contains 1530 cubic feet, and in another room thirty boarders have 1904 feet of air. Except for the short time allowed for eating, it is presumed that the whole family will not be in those rooms at the same time. But they have no other room to sit in, except their sleeping apartments, and these are rarely warmed by fires. It is, then, a reasonable supposition, that, in winter and in stormy weather, the boarders, when not employed in the mills, spend most of their time in these sitting rooms.

The mills, except when the ten hour system is adopted, are usually in operation twelve hours a day. Twelve or fourteen hours a day are thus left to be spent elsewhere. Making due allowance for the time required to pass between the mills and the boarding-houses, to walk abroad, and to visit, there will still be left some hours of every working day, and a great part of Sunday, to be spent in a crowded sitting room, besides the entire night in the crowded sleeping chamber.

While these operatives are at work, they usually have sufficient air. Most factories are large, airy, and elegant, while some are even magnificent. In these, everything is prepared to make the working men and women comfortable and cheerful. But when they leave their ample halls of labour, and go to their resting places, they exchange freshness, and airiness, and liberality in arrangements for comfort and life, for the close and offensive air of narrow apartments, and economy, even parsimony, in the means of life.

The projectors of these establishments design that they shall be conducted with due economy. They understand that the economy which gives to the labourer everything necessary to make him healthy and comfortable, is no less profitable than liberal. Still, as we have before stated, while no reasonable complaint can be made against the food, clothing, and the remuneration of operatives, or against their working places, the size of their rooms, and the insufficient degree in which air is supplied, indicate an economy which is not only misapplied, but which degenerates into parsimony.

Dr. Bell, after giving a slight notice of the various ventilators in common use, which depend upon the specific levity of the warmer air of the rooms for its removal, or upon the wind for its outward current, dismisses the whole by stating, that all these are very uncertain and insufficient means of removing the foul air from, or of supplying fresh air to, enclosed apartments. "With respect to all the hundred varieties of contrivances of the turn-cap or cowl order, their whole consideration may be briefly dispatched in simply observing, that their utility is wholly dependent on a movement which frequently, at uncertain times and sometimes for long intervals, ceases to exist. Consequently, the ventilation of buildings depending on the winds, must be just as uncertain as the wind itself, and the occupants of a crowded habitation might as reasonably trust to the prevalence of calms and breezes in a certain sequence for their food and drink, as for their air."—*Dr. Bell on Ventilating Buildings*, p. 73.

Dr. Bell supposes that all reliable means of ventilation must include a motive power more efficient and regular than the wind without, or the ordinary temperature of the room within, and that nothing but some power especially provided for this purpose can effect the object. This may be done by a rotary fan, which, by its suction force, draws the air through its central aperture from the apartments, and sends it off through the circumference. Or it may be done by heating the air of the ascending ventilating tube in various ways, and thus creating an upward and outward current from the rooms. The tube connected with the chimney does well in the winter, and for rooms which are heated by a fire; but it is useless in the warm season for all rooms, and at all seasons for lodging rooms, where no fire is burning. The ventilating flue may be heated by a fire kept in it for the purpose; or, when the house is warmed by the hot water or steam apparatus, a tube, containing either of these heated matters, by passing through the ventilating flue, will heat it sufficiently to create a current from the rooms connected with it. A jet of steam, thrown upward into the ventilating flue, will answer the same purpose; but this can be used only in such houses as are warmed by steam, and in factories, &c., in which steam power is used.

Dr. Bell then describes at length the best plans of ventilation, and illustrates them by a description of the methods by which the Houses of Parliament, in London, the Chamber of Deputies, in Paris, the Pentonville Prison, near London, one of the best ventilated hospitals for the insane in England, and the McLean Asylum, are warmed and ventilated.

Dr. Bell thinks, very properly, that plans both of warming and ventilating should be so connected, that our heat should come to us on our fresh air; for, the draughts of cold air, however pure, are chilling and unwholesome, and it is difficult to warm them by any ordinary apparatus, such as open fire or common open or closed stoves, in the apartment which is occupied, without occasioning discomfort, and often producing colds. The only exception to this is the stove recently invented by Dr. Clarke, and introduced into the school rooms of Boston, which is, in fact, a furnace in the occupied rooms. It consists of a stove surrounded by an outer casing of sheet iron, which is considerably larger than the stove, and separated from it by a space of several inches. By this means a layer, or a hollow cylinder of air, is interposed between the heated stove and the air of the room, and thus the occupants are protected from the scorching rays of the heated iron. The chamber between the stove and the box is connected, by means of a tube, with the outer air, and is open at the top; but a cover, of blunt, conical shape, is suspended a few inches above it. When the fire in the stove burns, the air in the surrounding box is heated, and passes out at the top. The suspended top prevents its rising immediately upward, and gives it a lateral direction. The pure air from without comes into this box and is there heated, and thus the rooms are constantly supplied with warm and fresh air.

Dr. Bell says "that all successful modes of ventilation, although they may differ in some principles and structure, yet agree in the following particulars:

"They are independent of all direct lateral openings, such as windows, doors, &c., for the supply of fresh air.

"They do not depend on the differences of temperature between the inner and the outer air for the power to remove the foul air away, nor upon any apertures or contrivances, operated upon by the passing currents of external wind, for this result.

"They all obtain fresh air, from pure external sources, through large channels provided for this purpose.

"In the cold season, this air is raised to a moderate temperature, and sent in large quantities into the apartments.

"It is not sent into the rooms through a single channel, as is usual through common furnaces; but through many small apertures, as through a perforated board in the lower part of the walls.

"And lastly, the apparatus by which the fresh air is introduced, and the foul air removed, is under control; so that the change of air in the apartments can be increased or diminished according to the number of occupants, and to their condition and wants."

Dr. Clark's pamphlet includes two reports, which were made to the school committee of Boston. One shows the necessity of, and the reason for, adopting a system of ventilation for the public school-houses in that city. The other report describes the plans—which were considered by the committee on ventilation as the best for warming and ventilating their public buildings—and the manner and cost of their execution. These plans are illustrated with good copperplate, electrotype engravings.

In the first report, the evils of confined air, the effect of continued respiration on the air and on those who respire it, are clearly set forth, in a plain, simple manner, divested of scientific terms and needless explanations. Dr. Clark shows the gradual, though progressive, effects of air which is even but a little below the natural standard of purity, on children and others who are compelled to breathe it for a long time. Its effects are insidious in their approach; but they are none the less certain in their results.

"Children, who are confined in the atmosphere of these schools, soon lose the ruddy and cheerful complexion of perfect health, which belongs to youth, and acquire the sallow and depressed countenance which might reasonably be expected in over-worked factory operatives; or the tenants of apartments which are never blest by the cheerful sun, or the reviving air."—*Dr. Clark, on Ventilation of School-Houses*, p. 12.

But a large number of the school rooms are worse than the one above referred to. The air in these is, generally, not merely a *little* below the natural standard of purity, but it is so foul as to be perceptible. After the rooms have been occupied an hour or more, the air is offensive to the nostrils, and oppressive to the lungs, of persons who enter them.

It is impossible that children, breathing air deprived of so much of its oxygen, and so loaded with carbonic acid gas and vapour, should have pure blood in their arteries. With this imperfect respiration, and imperfect decarbonization of the blood, the brain is supplied with impure pabulum of life; its energies, therefore, are imperfectly sustained; it cannot work with full and healthy power; the students can neither think clearly nor study successfully; and consequently, for want of pure air, much of their time, and much of the expenditure for their education, must be lost. But this loss of the money of the people, and of the time of the scholars, is of small moment compared with the waste of strength and the blight of health produced at this most susceptible period of life. How many rosy-cheeked, robust, and elastic children enter these schools at four or five years of age, and come out at fifteen pale, thin, and puny! They may not be sick, but they are far from being as vigorous as their earlier years promised.

After describing these wants of the schools, Dr. Clark proposed to warm all the rooms by Gardner Chilson's furnaces, or, where the furnace could not be used, with the ventilating stoves. Chilson's furnaces have a fireplace of soapstone, and a radiating surface of wrought iron, and a very large air chamber. Consequently, the air is moderately heated, and sent in large quantities into the school-rooms, and in this condition it is readily diffused throughout the apartments. But the old furnace, having fireplaces of brick, and cast iron radiating surface, and small air chambers, heated a small quantity of air to a degree intensely hot. This was very dry and uncomfortable, and did not diffuse itself through the rooms, nor create an equal temperature in the various parts.

Dr. Clark proposed that each room should have a ventilating duct, with openings both at the bottom and at the top of the walls, regulated by valves. All these air ducts from the different apartments in each building should terminate in a common duct, which should be capped by one of Emerson's ventilators. A large Argand lamp, or, if this is not sufficient, an air-tight coal stove, should be placed in each of these air ducts, to give sufficient force to the upward current.

By this apparatus, Dr. Clark proposed to supply each child with ten cubic feet of air a minute, which is deemed a proper allowance for adults. "But the greater delicacy of the organization of children, and their feebler ability to resist the action of deleterious agents, together with their greater rapidity of respiration, demand for them at least an equal supply."—*Ventilation of School-Houses*, p. 10.

The committee adopted these propositions, and the whole was carried into effect at the cost of about two hundred and fifty dollars for each of the eighteen grammar, Latin, and high schools; and similar improvements have been made in twenty-five primary school-rooms. The history and results of the whole work are described in the second report of Dr. Clark.

This is a very great improvement, and worthy of all imitation. We wish this example to be universally followed. For this purpose, we desire that a copy of Dr. Clark's Report should be placed in the hands of every school committee of the nation; our children, then, might have an opportunity of strengthening and developing their minds, without wasting or deteriorating their bodies for want of fresh air, while they are in their school-rooms. But the plan of ventilation of the Boston school-houses is not perfect. The objection still holds to the system of ventilation that depends on the wind for the motive power. Dr. Clark proposes, "for the purpose of compelling a constant action, and increasing the force of the ventilating apparatus," to have an Argand lamp or a gas burner, which should be put in operation whenever the wind should fail, or whenever the difference of outer and inner temperature should be insufficient to produce an ascending current. This is necessary, for the wants of the children are constant, while the motive power of the wind is proverbially otherwise.

Another objection is, that the ventilator adopted in Boston is not, according to Dr. Wyman's experiments, so efficient as one with the double cone. Nevertheless, even with these deficiencies, we hold up this example to all others who have charge of schools and school-rooms, and bid them go and do likewise.

We have already occupied so much space that we have not room to give an analysis of the other works at the head of this article. Mr. Toynbee's work is intended for the people. It is a plain description of respiration, and the natural relations of air and the blood, and contains several good engravings illustrative of respiration and circulation, and of the course of the currents of warm and cold air in heated and inhabited rooms, and of some of the simplest methods of ventilation.

Mr. Toynbee proposes that some simple means be adopted to ventilate shops, and the common and crowded rooms of the poor. One is the substitution of a pane of perforated glass, or a piece of perforated zinc, or even a series of glass bars arranged like a Venetian blind, for one of the upper panes of a window, for the purpose of letting fresh air in; he also suggests that an aperture through the upper part of the wall into the chimney, to let the foul air out, be made.

The last work which we have to notice is the "Uses and Abuses of Air." This is the beginning of a series of "Tracts for the People." It occupies the same ground as the London Tract, and describes so well the subject of its title, that it is a very valuable addition to popular science. It will do much to convince the world of the miserable economy of unventilated houses, and of the propriety of establishing means for purification in all our dwellings. Tract No. 1, or Part I., treats of the mechanism and chemistry of respiration, and of its connection with health and energy, and the effect of foul air upon both. Part II. treats of "the effect of foul air in producing bodily and mental disease; its effects at various periods of life; its influence on the general, physical, moral and intellectual condition of mankind. Part III., which is yet to come, proposes to include, Observations on the State of Ventilation in the City of New York;" "and the best methods of securing a pure and wholesome atmosphere inside of dwellings, churches, and buildings of all kinds."

We bid this new labourer welcome to so broad and almost uncultivated a field of usefulness. So extensive is the ignorance of the connection of life with air, and of the necessity of pure air for the support of health; so great is the neglect of the means by which fresh air may be secured within our places of abode, of labour, and of assemblage, that too many works which shall teach the law to the people, and stimulate them to obey it, cannot be produced. And to the societies under whose auspices these various tracts have been published, we wish all prosperity in the farther prosecution of their praiseworthy undertakings.

There is need of light on this matter everywhere. It has already dawned upon the rich and intelligent; but even among them its progress has been meagre. They have yet to be thoroughly convinced that fresh air is not merely a luxury, but a thing absolutely necessary for fulness of life.

But to the hardy children of want and toil, who are supposed to be able to endure any privation, and to care for no such luxury as the ventilation of their workshops and their homes, scarcely a gleam of light has yet come to show them how much more they, in their small and crowded rooms, need the means of procuring fresh air than their wealthy neighbours, who live in large houses; and to show them how much their vigour and their productive power depend on the air they breathe both night and day.

This last point, the connection at all times of pure air for respiration with productive power, cannot be urged too earnestly upon employers, contractors, and labourers themselves. Inasmuch as corrupt air vitiates the blood, and inasmuch as vitiated blood must produce imperfect nutrition, and imperfect nutrition must be accompanied with impaired strength, those who habitually breathe a corrupt atmosphere must be less able to labour than those who have sufficient oxygen for respiration. Notwithstanding this fact, we know that economy of air is carried to a very injurious extent in regard to labourers. This is most observable where extensive operations are conducted; and at such places, the paramount object appears to be to support the labourer with as limited a cost of rent as possible.

We have noticed this especially on railroads and other public works, where the dwellings of the labourers are put up only for a temporary purpose, and are therefore made of the smallest possible dimensions. We examined one of these shanties, and ascertained that, in an attic sixteen feet long and fourteen feet wide, with a height varying from 0 at the sides to six feet and two inches in the centre, fourteen labourers slept every night.

In this room there were no means of ventilation, neither door, nor window, nor other aperture, except the cracks in the ends and roof, and a passage way through the floor leading to the kitchen below, in which nineteen persons ate and sat in the day, and five slept at night. Fifty-six cubic feet of air was all that was provided for each of these men; but nature forced sufficient air through the cracks to save them from suffocation, though not enough to invigorate them. The labourers assured us that, when they awoke in the morning, they felt unrefreshed and languid; that they had a sense of oppression about the breast and heart, as well as some nausea and headache, and a feeling of weariness in their limbs. They crawled from their beds, crept down their ladder, and staggered out of the door; and some time elapsed before they felt clear enough in their brains and strong enough in their limbs to go to any work.

If the contractors who employed these men had understood the true relation between life and air, they would have seen that, for want of sufficient oxygen, these workmen must have not only less muscular power, but less control of the nervous system and their muscular action; and that, consequently, they would not only strike their blows with less force, and raise less with their shovels, but that they would more frequently strike ineffectually, and, in the end, accomplish so much less work.

By the same light, the proprietors of manufacturing establishments may see that operatives who sleep in suffocative air must bring weaker muscles and duller brains to their work. The weaver, who is thus unrefreshed, has a slower apprehension to perceive the operations and the variations of her loom, and a feebler hand to guide it; and the machinist uses his tools with less force, and directs them with less precision; and all come short of that full measure of labour which is accomplished by others whose blood is well purified, and whose bodies are thoroughly invigorated in the night.

Another work on ventilation which shall meet the necessities of the people, is yet required; that is, a treatise which shall show the necessity of fresh air, and the effect of impure air on health, on fulness, and on energy of life; which shall explain the principles involved in the motion of the air; and which, lastly, shall describe the various means and plans by which rooms, halls, and workshops can be ventilated. This should be written in such simple language, that every builder and every carpenter may be able easily to understand it, and so well illustrated with good engravings, that no doubt can be left in the minds of any as to the practical application of the principles.

This work should not be a mere tract, which may be forgotten as soon as read, but a volume, that shall be kept ever ready for consultation as a handbook of the builder's art. This volume should yet be so small, and furnished at so reasonable a price, that every carpenter and mason may afford to purchase it. When this desideratum is supplied, we trust that the science of ventilation will be as well understood as that of warming and lighting, and that the means of receiving a pure atmosphere into all occupied rooms, will be as universally provided for as those for the admission of light and heat.

E. J.

Art. XVIII.—*On the Influenza, or Epidemic Catarrhal Fever of* 1847–8. By Thomas Bevill Peacock, M. D., Physician to the Royal Free Hospital, &c. London, 1848: pp. 182.

The history of epidemics is, in several respects, the most interesting object of study that can engage the attention of the philosophical inquirer into the laws of disease. These occasional maladies are displayed upon so grand a scale, they affect so many persons in widely distant countries and localities, they occur at such opposite seasons and under such various circumstances, and are described by so many observers from different points of view, that the laws which regulate them can apparently be ascertained with much greater exactness than those which govern sporadic diseases. We say *apparently* ascertained, because the precision of the conclusions reached in regard to epidemics, exists only in their generical relations. Descending to their specific forms, we find that they embrace types of disease the most dissimilar, and individual cases, again, display groups of symptoms such as are never found associated in sporadic affections. But the phenomena and laws of epidemics, although thus removed from the nearer and more palpable domain of individual experience, are invaluable for correcting the inferences drawn from the study of sporadic affections in regard to the causes and nature of disease, inasmuch as they are incompatible with narrow and exclusive doctrines upon these subjects. The doctrine of irritation, for example, betrayed its weakness the moment it was tested by epidemic diseases; for in them it was plain, even to the least observant physicians, that the most prominent and alarming symptoms either bore no proportion to the local change of structure, or that they were independent of it altogether.

For such, amongst many, reasons, the truthful history of an epidemic is a contribution to medical science of real and permanent value; and we, therefore, accept the one which is now before us with a satisfaction which is all the more lively that the author is, in several important respects, superior to those of his countrymen who have treated of similar subjects. His descriptions are deduced from "a careful analysis and comparison of the reports of all the cases under treatment in the Royal Free Hospital, during the epidemic, while the several particulars were still fresh in the memory." "Of the more severe and peculiar cases," he states that "full notes were taken generally every day." And the reader may judge how faithfully and fully the record was made, by a reference to the twenty illustrative cases presented in the work as examples of the different forms which the complaint assumed. Such guaranties for accuracy are rarely afforded by writers on epidemic diseases, and in the present instance they more than compensate for the comparatively narrow field of the author's observation.

The epidemic influenza of 1847–8 commenced in London about the 16th or 18th of November 1847; was most active from the 22d to the 30th of that month; and ceased to be very prevalent by the 6th or 8th of December. During the remainder of that month, and the early months of 1848, however, it continued to prevail, and to impress its type upon sporadic diseases.

The month of October 1847, was dry and very warm, its mean temperature being 52.9°. Up to the 16th of November, the weather remained unchanged; when, in the course of four days, the thermometer fell 22.2°, and the earth was frozen. By the 22d, however, the mean temperature had risen to 44.7°, the barometer began to fall, fogs prevailed, a large quantity of rain fell, and the weather continued to be warm and wet until after the decline of the influenza. On December 7th, or about the period when the ravages of the disease sensibly diminished, there was a remarkable fall of the barometer, which then stood at 28.381.

The number of deaths attributed to influenza in the week ending November 20th, and registered in the London Registry Office, were *four;* and in the succeeding weeks, up to January 1st, 1848, were, respectively, 36, 198, 374, 270, 142, and 127. During the remaining winter months, and up to April 1st, the number progressively declined. In the four weeks preceding the latter date, the numbers were, respectively, 11, 10, 6, and 8. "The deaths registered as from influenza, amounted, for the entire six months (from October to April), to 1739. The Registrar-General has, however, remarked that, during the six weeks the epidemic was at its height, not less than 5000 persons died in excess of the average mortality of the period, an excess which throws itself in every class of disease; the local maladies which had been the most predominant affections being, doubtless, in many cases, assigned as the cause of death." This excess was chiefly due to pulmonary affections, typhus, eruptive, and puerperal fevers. It is estimated that about one-fourth of the whole population of London was, more or less, affected by the influenza. The mortality of the epidemic was chiefly confined to persons who were in previously unsound health, or of advanced age. The rate of mortality in childhood was raised 83 per cent., in manhood 104 per cent., and in old age 247 per cent.

The epidemic, of which Dr. Peacock describes a part of the ravages in London, extended over a great part of Europe. It prevailed at Constantinople in August; at Paris and Geneva about the beginning of December; at Madrid in January; at Edinburgh at the same time as in London; while in some of the intermediate districts it was most felt during the last two weeks of December.

The great variety of symptoms presented by those who are attacked with influenza, has led to its division, by several authors, into numerous forms, such as inflammatory, bilious, rheumatismal, convulsive, simple, complicated, cephalic, abdominal, &c. Dr. Peacock admits three general varieties: 1st, *simple catarrhal fever;* 2d, *catarrhal fever, with pulmonary complication;* and 3d, *catarrhal fever, with predominant disorder of the abdominal organs.* The first two divisions comprise the cases of influenza generally recognized as such; and the third includes fever with bilious disorders, and of a remittent type, together with gastro-enteritic and bilious fever, complicated with rheumatism.

Simple Catarrhal Fever.—The symptomatology of this form is accurately given by the author, but need not detain us, since most of our readers must be familiar with it. We may merely note his remark of the frequency of rheumatic affections, often of an intermittent type, towards the termination of the complaint. It is not easy, in many of these cases, particularly where the pain is limited to one side of the head, the orbit, &c., to determine whether the attack is rheumatismal or neuralgic. Often, however, it is clearly of the latter nature. Amongst children, a common complication noticed in the London epidemic was inflammation of the throat and larynx, and even membranous croup. The same remark is true of the influenza which prevailed in Philadelphia at the close of 1848. At that time cases of membranous croup were singularly frequent.

Catarrhal Fever with Pulmonary Complication.—The most important pulmonary complication described by the author is capillary bronchitis, more generally known as suffocative catarrh. This affection occurred most frequently in persons who had been previously in bad health. One of its peculiar symptoms, and the cause producing it, are dwelt upon more fully than by any other writer upon this subject; we allude to the increased resonance of the chest on percussion, which is observed in the advanced stage of the affection. On examining the bodies of those who perish from this form of disease, the lungs are found extremely inflated and emphysematous, and, instead of collapsing when the chest is laid open, they, in some cases, even protrude from the cavity. The emphysema is not confined to a portion, but affects the whole pulmonary tissue. This condition proceeds from the air being drawn into the pulmonary vesicles, and accumulated there by successive inspirations; for the expiratory act, which is much feebler than the inspiratory, is unable to force back the air which has been breathed, past the barrier of tenacious mucus, or fibrin, which clogs the lesser branches of the bronchia. The effect of pneumonic consolidation in perpetuating this emphysematous state of the lungs, is well shown and explained by the author. In some cases where the capillary bronchitis was complicated with pneumonia, and death took place from other causes some time after the acute attack, the smaller bronchial tubes were found dilated in those portions of the lung, chiefly, which had been hepatized. In these portions, doubtless, the parenchymatous effusion had prevented the natural contractility of the bronchia from operating after the removal of the distending cause, and hence the dilatation persisted. Dr. Peacock is of opinion that many cases of emphysema, dating from childhood, are to be explained by the occurrence, at this period of life, of an attack of capillary bronchitis which has been neglected, or which, from some other cause, has been sufficiently prolonged to render the dilatation of the pulmonary vesicles permanent. The great constancy of emphysema, as a result of capillary bronchitis, certainly favours this view.

Pneumonia was not an ordinary complication of the epidemic described by Dr. Peacock. It was remarkable for the absence of pain in the greater number of instances; probably because it originated from within, and was not associated with pleurisy. In some cases there was decided jaundice, and in the others some yellowness of the conjunctiva. Notwithstanding the severity of the local affection, the serious complications in other organs, and the extreme prostration of the patient's strength, this disease proved fatal but in one of the seven cases met with by the author. On the other hand, he found capillary bronchitis invariably a most alarming, and, in five out of eleven cases, a fatal malady.

The occurrence of influenza in phthisical patients was found to be extremely dangerous, not only from its immediate effects, but because it appeared to hasten the progress of the original disease. Several times, indeed, the author could trace the first symptoms of consumption to an attack of influenza.

Epidemic Catarrhal Fever with Abdominal Complication.—The cases included under this head are divided, by Dr. Peacock, into, 1st, those characterized by disorder of the gastro-enteric mucous membrane; 2d, those in which the enteric affection was combined with various degrees of hepatic derangement, and a tendency either to relapse or to assume a remittent character; and, 3dly, those complicated with rheumatic symptoms.

Under the first head, are described two forms of continued fever; the one, ephemeral, with mild symptoms, and terminating in cure within from four to seven days; the other, if we do not err, identical with typhoid fever (abdominal typhus), for, in every point of its symptomatology, it closely resembles this affection. In the slowness of its invasion, for example, the dryness of the mouth, and sordes upon the teeth; the restlessness, combined with torpor, followed by muttering or active delirium, and by coma; the meteorism, tenderness, and gurgling of the abdomen; the diarrhœa and bloody stools; slight bronchitis; a duration of from twenty to thirty days; with ulceration of the glands of Peyer, swelling and softening of the mesenteric glands and spleen. In fact, the only characteristic symptom of typhoid fever which did not present itself, was the rose-coloured spots.

The whole number of cases of "influenza with abdominal complication," recorded by the author, was thirty-one; of which five were fatal, and of these latter, four belonged to the form of the disease under notice. They were all, however, aggravated by associated affections of a serious character.

If, as we entertain no doubt, typhoid fever is a specific disease, which occurs in many parts of Europe and of the United States, with precisely the above *cortége* of symptoms, it is not easy to understand how it came to be regarded by Dr. Peacock as a form of influenza. There is, indeed, nothing in his description to show that this well-known and very regular disease underwent, in any considerable degree, the epidemic influence. It seems to have maintained the same characters, when observed by Dr. Peacock, as when it occurs either sporadically or epidemically, and unconnected in any manner with influenza. The author, in another place, assigns a reason for his arrangement; we shall briefly examine it when speaking of the nature of influenza.

The second form of abdominal complication in catarrhal fever, as described by Dr. Peacock, bears a close resemblance to our milder grades of remittent fever. The attack was usually sudden, with rigors, depression of strength, followed by hot skin, a full, frequent, and bounding pulse, thirst, loss of appetite, and bilious vomiting. At the end of a week or ten days, a rapid amendment took place, and the patient seemed convalescent; but between the eleventh and fourteenth days, sudden relapses occurred, with symptoms resembling those of the invasion, but speedily merging into a typhoid condition, with slow, feeble pulse, cool skin, jaundice, and pain or tenderness in the right hypochondrium. In three or four days more, the patient would begin to recover rapidly. Other cases, in which the invasion was more gradual, assumed a lower type. The mind was torpid, the matters vomited resembled coffee-grounds, and the region of the liver was acutely tender. Diarrhœa, bloody stools, and epistaxis were frequent. The febrile paroxysms were irregular, sometimes quotidian, sometimes tertian, or occurring at uncertain periods, and were always succeeded by extreme prostration and profuse perspiration.

These symptoms, it is well worthy of notice, are those which belong to a class of fevers never met with as independent maladies elsewhere than on the borders of marshes, or where similar atmospheric conditions exist, nor even then unless there is a wide daily range of the thermometer. Yet we find them, in the present case, arising, in a striking manner, in London, in the thickly peopled parts of which city true remittent fevers are, perhaps, never met with—and arising, too, after winter had fairly set in. It is difficult to refuse believing that the epidemic influence had power to create this unwonted morbid display, and to create it by a specific power independent of atmospheric and other external and habitual impressions. If it really possessed such a power, the solution of the problem of paludal diseases, which refers them to vicissitudes of temperature, &c., is less simple than the advocates of this method suppose; and the agency of miasmata may still be admitted as none the less real because it is mysterious.

We are not informed of the proportionate number of cases of this form of the disease, and cannot, therefore, judge accurately of its relative fatality. It is, however, stated that, "notwithstanding the very threatening appearance of the cases of remittent fever, and the extreme prostration of strength following the relapses, every case terminated favourably; and but one death occurred from the low form of continued fever with hepatic disorder." In this case, permission to examine the body could not be obtained.

The rheumatismal complication described by the author, is stated to have been associated with hepatic and enteric disorder, and low fever, with, in fact, the symptoms of typhoid or remittent fever, but in such a manner that pain was a predominant feature. It was generally of a remittent or intermittent character, was most distressing in the forehead, and, in some cases, was limited to one temple, or to one eyebrow or eyeball. The breath had a peculiarly unpleasant acid and fetid odour. After the paroxysms, there was extreme collapse, with profuse perspiration, and cold and livid extremities. This description does not, we think, clearly indicate the rheumatic nature of the pain in question. Without denying that it possessed this character, the question may fairly be asked—was it not neuralgic? The treatment which successfully combated this distressing form of the disease at first sight, appears to favour the author's opinion; but, as we shall endeavour to show further on, does not fully establish it.

Treatment.—The simple *catarrhal* variety of influenza was successfully treated by Dr. Peacock with an emetic, followed by a full dose of opium, or of an opiate combined with a diaphoretic, such as Dover's powder and nitre.

The author confirms, by his experience, the inutility of general depletion where influenza is complicated with *capillary bronchitis.* Dry, or scarified cups, applied between the shoulders, he found more beneficial, but by no means uniformly useful. He recommends the employment of antimonials in emetic doses, at the commencement of the disease, and their continuation as nauseants through the active stages. He reminds the reader, however, that the efficacy of emetics decreases with each repetition of them. After emesis and cupping, opiates should be administered in quantities proportioned to the excitement and restlessness of the patient, and combined with small doses of mercury, so as slightly to affect the patient's gums. While this treatment is in progress, it is desirable that counter-irritation should also be employed, and a blister placed between the shoulders.

"In the second stage of the disease, when crepitation is extensively audible over different parts of the lungs, the prospect of recovery becomes small, and the available means are necessarily very limited." Emetics of ipecacuanha and sulphate of zinc may be employed, to aid in expelling the viscid secretion of the bronchia; but stimulants and anodynes must be chiefly depended upon. Of these, ether, squills, senega, and serpentaria, with camphor and the several narcotics, may be prescribed, and the strength supported with animal broths, jellies, wine, and brandy. We are disposed to think that the author does not give sufficient prominence to the medicinal effects of brandy. There are certainly cases in which it almost alone will be found effectual in promoting expectoration, and sustaining nature until the morbid cause of the pulmonary secretion has spent its force. Dr. Peacock well remarks that stimulants are of little avail where the depression of strength is, from the first, such as to forbid depletion and sedative measures generally. During convalescence from the form of influenza under notice, tonics, and especially quinine, were given with advantage; and where the sputa continued to be viscid, expectorants and anodynes, with alkalies. The difficulty of breathing, which is so apt to recur upon slight exposure, was generally much relieved by the tincture of lobelia alone, or in combination with anodynes, and in such doses as to produce slight nausea.

In the author's treatment of influenza complicated with *continued typhoid fever*, the only points of interest are the liberal employment of tonics and stimulants during the stages of prostration, and of anodynes to relieve sleeplessness in the decline of the attack. The *remittent* form he treated with quinine, in doses of two or three grains, three or four times daily. As the paroxysms became more clearly intermittent, the dose of this medicine was augmented twofold. Ammonia and brandy were likewise prescribed freely. The profuse perspirations were counteracted with the mineral acids and bark.

In the "rheumatic" form, with "distressing pains in the head, chiefly experienced or aggravated at night, with great restlessness or inability to sleep, and nocturnal or continuous delirium, the most rapid and decided amendment followed the exhibition of colchicum," of which the tincture of the seeds was given every three, four, or six hours, in doses of not more than four or five minims. We before suggested that the pain experienced in this form might be neuralgic rather than rheumatismal, and the account given of the treatment which was successful in relieving it, corroborates this view. For it is contrary to general experience, that so small a dose of colchicum should produce the results ascribed to it; and, in fact, we are told that "it was almost invariably combined with ammonia and opium; stimulants or tonics, such as wine or brandy, bark or quinine, being usually administered at the time, or later in the attack." Neuralgic pains, occurring in miasmatic diseases, are usually found amenable to such treatment, but would scarcely yield, we suspect, to five minim doses of a medicine whose average dose is from f ʒss to f ʒj.

The Nature and Causes of the Epidemic.—As introductory to the discussion of this subject, Dr. Peacock endeavours to establish the proposition, already adverted to, that the several forms of the disease, which are described by him, proceeded from the direct agency of the epidemic influence, and are, therefore, in reality what he regards them to be, varieties of one and the same malady.

After showing that, according to the London bills of mortality, the increase of deaths during the epidemic was "scarcely greater from pulmonary diseases than from typhus, remittent fever, erysipelas, rheumatism," &c., and that a similar fact had been recorded of epidemics of influenza in many different places, he sums up the argument as follows:—

"When we consider the remarkable coincidence in the period of accession, general prevalence, and decline, of the several forms of pulmonary, enteric, hepatic, and rheumatic affections; the remittent and typhoid character of the febrile diseases; the very common occurrence of symptoms referable to the stomach, intestines, and liver, in the cases with predominant affection of the lungs, and of those of bronchitis, and pneumonia in the abdominal form of the disease; and when we further find that these symptoms were features not peculiar to the recent influenza alone, but have also, in a greater or less degree, characterized all its former appearances in this or other countries; we can scarcely refrain from acknowledging, that these several affections are not merely coetaneous, but correlative, and types and modifications of one disease, with which they have a common origin."

To this conclusion we are, by no means, prepared to subscribe. It is not a necessary consequence of the premises which the author so fairly and so fully states. The argument proves too much; for if unity of nature is admitted for the several forms above described, for the epidemic simple catarrh and the continued typhoid fever, for example, upon the ground of their frequent coincidence, then we are bound to acknowledge a like unity of nature between either or all of these forms, and small-pox, scarlatina, measles, puerperal fever, whooping-cough, &c., from all of which there was a great increase in the number of deaths during the period of the influenza. Such a train of reasoning, carried a little further, would soon issue in re-establishing the obsolete dogma of the unity of disease, a doctrine which has done infinite mischief in effacing from the minds of medical reasoners those ideas of difference among diseases, without which it is impossible to observe their phenomena truly, to describe them intelligibly, or to treat them rationally.

It is, indeed, a property of several epidemic maladies to be attended with an unusual development of ordinary sporadic affections, which are, in that case, more or less impressed with the epidemic type; but to attribute identity of nature to both classes, on account of such coincidence, would be to commit the fallacy of ascribing to an accidental the virtue of an essential cause, to assume that all effects whatever of a given cause must be identical in their nature. Even among cognizable causes, many produce very various effects, according to the intensity of action of the cause, or the intermediate links between it and the particular effect which we witness. Mere difference of intensity of force will give rise to direct results of essentially the same nature, but the interposition of a new cause, of another sort, will give rise to indirect results, which may partake, in a very slight degree, of the nature of the original cause.

So in the case before us; the power whose appropriate and direct effect is to produce epidemic catarrh, may indirectly develop typhoid fever and small-pox, without the latter possessing a common nature with the former; it may develop them simply by removing the obstacles which exist to their ordinary prevalence. If, for instance, prostration of the nervous system is favourable to the development of typhus, erysipelas, &c., and the essential cause of influenza prostrates the nervous system, then a condition exists which is adapted to promote the occurrence of these diseases. Something of this sort we are disposed to regard as the real connection between influenza and the maladies which prevail in company with it, and which receive, more or less distinctly, its impress. We can perceive no reason for believing, with the author, that both are, *in their nature*, "correlative," or mutually dependent upon one another for existence; but there is certainly substantial ground for believing that the former promotes the unwonted development of the latter by its debilitating, and, perhaps, poisonous influence upon the economy.

With respect to the mode of action and the nature of the morbific influence, the author does not offer any suggestions that have not already been proposed by other writers. He believes that the phenomena of the disease point to the nervous system and the blood, as the portions of the organism first involved. He does not allude to the ingenious supposition that the poison is material; a view inferred from the disease so generally attacking the mucous membrane of the pharynx and air-passages, and proceeding from above downwards, and which has, to some extent, been confirmed by the discovery of a new ingredient in the atmosphere (*ozone*) during the prevalence of influenza and other epidemics. Facts have been mentioned by several writers, which seem to prove that influenza may be propagated by contagion. To these, Dr. Peacock adds the following:—"I cannot but regard it as worthy of remark, that, while four persons, two nurses and two patients, took the disease in the wards of the hospital during the recent epidemic, and had severe attacks, these cases all occurred in two wards in which many influenza patients were under treatment; while in a third ward, into which no case was admitted, both nurses and patients escaped the disease altogether, or had it so slightly as not to require any medical attendance."

The concluding third of the volume before us is filled with twenty illustrative cases, which present examples of the several forms of influenza before described. These records are well drawn up, and fully confirm the impression made by the previous portion of the essay, that the author is a sound and practised observer. He has produced a work which deserves to rank with the best in the department of medical literature to which it belongs. A. S.

BIBLIOGRAPHICAL NOTICES.

Art. XIX.—*Practical Pharmacy. The Arrangements, Apparatus, and Manipulations of the Pharmaceutical Shop and Laboratory.* By Francis Mohr, Ph. D., and Theophilus Redwood: edited, with extensive additions, by Wm. Procter, Jr. Illustrated by 500 engravings on wood. Philadelphia: Lea and Blanchard, 1849.

The publishers of this work have conferred a favour on the profession by their successful endeavours to produce it to the American public in a form creditable to themselves and equal to the value and importance of the subject. Pharmacy, in its practical operations, had been much neglected as a part of the education of the apothecary of the United States, until, within a few years, it was introduced as a prominent portion of the public instruction afforded by the College of Pharmacy of this city. Previously, all the knowledge obtained by the apprentice was confined to that afforded by the limited scope of his own immediate circle, consisting chiefly of a routine of operations, the perfection or imperfection of which was dependent on the source from which they were derived. It was hence no uncommon occurrence to meet with some preparations which were very inactive when procured from any particular shop, while the same place furnished others of undoubted efficacy. Viewing it as a matter of great importance to afford every facility to the apothecary to acquire perfection in his art, the College of Pharmacy resolved to enlarge their sphere of usefulness by establishing a chair of practical pharmacy, and the able editor of the work before us was chosen to fill this station. In the publication, he appears as editor of the American edition; but from the very extensive and valuable additions, both as to topics discussed and to extension of those already contained in the original work, he may rather be considered in the light of one of the authors. In thus extending the work, subjects are noticed which had escaped the attention of the original authors, and the whole is better adapted to the wants and requisitions of American pharmacy.

The authors of the original work, Francis Mohr, teacher of Pharmacy in the Royal Prussian College of Medicine, Coblentz, and Theophilus Redwood, Prof. of Chemistry and Pharmacy in the Pharmaceutical Society of Great Britain, are well known for their contributions to the improvements of pharmaceutical knowledge, and a work from their pens must be considered as an exponent of the condition of pharmacy as it exists abroad; and when, in addition, we have whatever may be peculiar to American pharmacy, we are provided with all the requisites by which to form a skillful and scientific pharmaceutist.

The plan of the work is modified from the original, by breaking the matter into chapters, which is very obviously an advantage in a book of reference, in enabling the eye to distinguish at a glance the particular part sought; and, by a kind of classification, leading to information which may not be specifically noticed, but which would be appropriately sought for under its particular head.

The arrangements of the shop are necessarily first noticed, together with the apartments which are required for storage and operations, which could not be advantageously conducted, mixed with the more immediate and important duties of dispensing medicines. Under this head are considered the importance of location; the form and adaptation of the shop itself; the means of heating with such applications to other purposes as the methods will afford; the means of ventilation, as best adapted to health and comfort; the methods of lighting and their incidental advantages; together with various minutiæ of arrangements calculated to facilitate the operations and economize the time, and thereby prevent confusion and delay.

The operation of weighing and measuring, together with the requisite information concerning the various standards adopted by different countries and pharmacopœias, is fully discussed, and sources of error and of injury to instruments to be avoided, pointed out,—illustrated by woodcuts of the forms best adapted for practice, and of modes of operating which are most convenient. Under this head, relative weight or specific gravity, as a distinctive character of many substances, is explained and illustrated in an ample manner.

The sources of heat, the modes of application, and the instruments used, with their applications, occupy the two succeeding chapters; including an extensive range, from which selections may be advantageously made, and which may be most usefully applied by any individual to the local peculiarities of his situation; their adaptation to his peculiar wants, or the facilities for procuring, or economy in using, any particular form of fuel.

Comminution under all its forms occupies another chapter. In this place is noticed a mill of American origin (Swift's drug mill), very simple in construction, and obviously well adapted to most of these operations.

Decantation, washing, separation of fluids, filtration, clarification, decoloration, and expression, operations very simple in their character, but requiring care and a peculiar kind of information for their successful performance, occupy a due share of notice and illustration, and various forms of apparatus and modes of manipulation are presented, and their adaptation to the circumstances pointed out.

In chapter ninth is contained a very full and complete examination of the subject of solution, and the purposes to which this process is applied. The different methods and apparatus applicable to obtain all the portions of any body soluble in the various menstrua employed, are amply illustrated, and the applications to which each may be peculiarly adapted, together with the cautions necessary to be attended to in their use, are given in a clear and perspicuous style. The process of percolation, or displacement, necessarily occupies a very considerable share of notice, as it is a method of manipulation calculated to produce most excellent results when well performed, and with the proper precautions in the condition of the matters acted on, and in the whole being subjected to the complete and successive action of the solvents; while, on the other hand, very imperfect results are necessarily the consequence of any inattention to the minutiæ; by partial action, the effect of imperfect comminution, loose packing, peculiarity in the material itself, the establishment of currents, &c. The remarks under this head deserve the careful and studious attention of every one who should attempt this process; not only from regard to economy, in obtaining from the matter operated on all its soluble portions, but also to avoid deception as to the activity of fluid medicaments (syrups, tinctures, &c.), obtained in this way; it being naturally presumed that, when this method has been used, full strength and activity are insured in consequence of the perfection of the action when properly conducted. Other results also will naturally flow from the same source; one of which—a distrust in the process itself, arising from doubt of the perfection of action, or of its capability of application except in the most experienced hands—would, if common, cause its almost entire abandonment, and the substitution of processes manifestly inferior. Among the illustrations, will be found several extemporaneous forms well adapted for small quantities, and also for domestic use; in which articles readily obtainable may easily be converted into displacement filters, and by which the family of the patient may, with a few instructions, obtain infusions superior to those ordinarily made under similar circumstances.

In the succeeding chapters are considered evaporation, including the preparation of extracts, and the operation of drying, distillation, sublimation, and the various operations in which heat is necessary, calcination, reduction, &c.; generation and absorption of gases: all copiously illustrated by the most approved forms of apparatus.

Chapter fourteen is on subjects important in a pharmaceutical point of view, but entirely omitted in the original work, viz., general remarks on the preparation of articles for external application. The remainder of the work is chiefly concerned in miscellaneous operations, many of which are of frequent or every day occurrence to the pharmaceutist; while others, he is called upon only occasionally to perform, but in which he is nevertheless expected to exhibit a proper degree of skill. Some of the operations noticed are laborious in their nature, and any appliances calculated to ameliorate this condition would be received with a just reward of gratitude; and we may here point out an instance in which this is fully earned, by requesting the reader to turn to the apparatus figured in page 524, which seems admirably calculated to relieve the pharmaceutist from a heavy labour, in preparing one very common form of external application.

In conclusion, we may add that there is appended to the American edition, a description of convenient apparatus for testing,—a list of the different reagents, and the mode of ascertaining their purity, together with the means of purifying and preparing such as may not readily be obtained, with sufficient freedom from contamination for the purposes to which they are to be applied. It must be evident, from the views of the work which we have thus given, although extremely meagre in proportion to the subjects embraced, that it has accomplished a long-desired object, in filling up a void in pharmaceutical education, and that every pharmaceutist will consider it as an important addition to his library, and a valuable source of reference obtainable at comparatively small cost.

R. B.

Art. XX.—*Human Anatomy.* By Jonas Quain, M. D. Edited by Richard Quain, M. D., and William Sharpey, M. D., F. R. S., Professors of Anatomy and Physiology, in University College, London. First American, from the fifth London edition. Edited by Joseph Leidy, M. D. In two volumes, with over 500 illustrations. Philadelphia: Lea & Blanchard, 1849.

An accurate acquaintance with the healthy structure of the body must precede all successful physiological and pathological study. And this is becoming more and more an established truth, in proportion to the increasing minuteness of anatomical investigations,—each functional expression, whether of a morbid or of a healthy character, being, in all probability, associated with, and dependent on, its own peculiar structural condition.

It is gratifying, therefore, to see that this important branch of medical science is being so successfully cultivated. With constantly improving means for investigation, anatomists are pursuing nature into her most retired haunts; and if they cannot ascertain *how* she accomplishes her work, they seem determined, at least, to detect the instruments which she employs, and the conditions under which she operates. Nor are their labours confined to human anatomy; plants, and all the tribes of animated nature, and even the inorganic world, are made to contribute largely to improve man's knowledge of his own "curiously and wonderfully-made" frame. Youthful students of medicine are prone to cavil at, what they consider, this useless display of research on the part of comparative anatomists; but a little more reflection will convince them of their error, and will show them how easy is the transition, the progressive march, from the lowest order of created beings to the highest;—how, for example, the knowledge of the mode in which the circulation and nutrition of the plant is effected, has influenced our ideas concerning these processes in the human individual. Anatomy is thus rendered the most entertaining of the associated departments of medicine, instead of the dull, dry thing it has so often been made by those who cultivate and teach it; as though it were an isolated branch of study, abounding in hard names which mean nothing, a chaos of formless objects having very little relationship with each other, and very little bearing upon the practical duties and knowledge of the physician.

There have been many very excellent treatises on Anatomy published recently, both in the English and foreign languages. Some of these have been presented to the American student to guide and assist him in his labours. Of these, the work, of which the title prefaces this article, is the latest, and we propose to call the attention of our readers to its character and value.

Its authors and editors are well known to the profession wherever the kindred studies of Anatomy and Physiology are cultivated. The Messrs. Quain have enriched our science with excellent general and special treatises on Anatomy; and the most valuable collection of information in Anatomy and Physiology, which our language contains (*The Cyclopædia of Anatomy and Physiology*), has been largely indebted to Dr. Sharpey for his contributions. Concerning the American editor, we need only say that, those who know him, build high expectations and confidence upon his untiring zeal and industry in the prosecution of his favourite pursuits, and upon the skill with which he conducts them; those who do not know him, we would refer to the pages of this Journal, and the *Journal of the Academy of Natural Sciences*, of this city, for the proofs of his ability to fulfil with honour and usefulness the task of editing the work before us.

The treatise is commenced with a very interesting and able Introduction to General Anatomy, from the pen of Dr. Sharpey. The author gives an account of the physical, chemical, and vital properties of the textures with great clearness, and with sufficient detail to render the description of real and valuable assistance to the reader. That portion of this chapter which is devoted to the vital peculiarities of the tissues is particularly full and attractive; and, while the writer constantly feels the necessity of receiving with caution the extraordinary revelations of the microscope, he is not thereby rendered incredulous, but presents a well arranged and carefully digested view of the present state of knowledge respecting the development and formation of the textures. The subjoined extract will show the good judgment which Dr. Sharpey displays in the appreciation of recent discoveries, and his views respecting their importance. (See p. 51.)

"No branch of knowledge can be said to be complete; but there is, perhaps, none which can, at the present moment, be more emphatically pronounced to be in a state of progress than that which relates to the origin and development of the textures; much of the current opinion on the subject is uncertain, and must be received with caution. In these circumstances, in order both to facilitate the exposition, and to explain to the reader more fully the groundwork of the doctrines in question, we shall begin with a short account of the development of the tissues of vegetables; for it was in consequence of the discoveries made in the vegetable kingdom that the happy idea arose of applying the principle of cellular development to explain the formation of animal structures, and they still afford important aid in the study of that, as yet, more obscure process." Then follows an "Outline of the Formation of Vegetable Structure," from cells which in the progress of their development increase in size, become modified in shape from circumstances to which they are exposed in the plant itself, and coalesce with, and open into, adjoining cells, thus forming tubes. The contents, too, of these cells suffer changes of chemical constitution, and physical form and arrangement, whereby new matters are generated, and the structure of the vegetable fabric is built up. Turning, now, to the consideration of the formation of the animal textures, the writer points out the analogy which exists between the process of development as it occurs in these and that which takes place in vegetables; and then proceeds with the subject when this resemblance has ceased to be so striking, from the greater complexity of the structure of animal textures. Some remarks on the nutrition and regeneration of the tissues close this chapter. The writer makes no attempt at novelty of fact or of illustration; but his views are expressed with very great clearness, and excellent judgment is displayed in sifting and arranging the great mass of testimony, which is often of a conflicting character, so that as near an approach may be made to truth as circumstances will permit: the text is *fully illustrated by numerous well-executed drawings.* That this minuteness of study devoted to microscopic investigations is really of a valuable practical nature, the following passage shows:—(p. 71.)

"In concluding what it has been deemed advisable to state in the foregoing pages respecting the development of the textures, we may remark, that, besides what is due to its intrinsic importance, the study of this subject derives great additional interest from the aid it promises to afford in its application to pathological inquiries. Researches which have been made within the last few years, and which are still zealously carried on, tend to show that the structures which constitute morbid growths, are formed by a process analogous to that by which the natural or sound tissues are developed: some of these morbid productions, indeed, are in no way to be distinguished from cellular, fibrous, cartilaginous, and other natural structures, and have, doubtless, a similar mode of origin; others, again, so far as yet appears, are peculiar in structure and composition, but still their production is with much probability to be referred to the same general process."

Osteology constitutes the first division of the treatise. As here discussed, it comprises a very full history and description of the "osseous tissue," its composition and internal structure, and the mode of its formation and growth;—with the special anatomy of each division, and of each individual bone of the skeleton. We are sure that the reader will feel well repaid by the perusal of the chapters which are devoted to this portion of the anatomy, comprising more than one hundred and fifty pages. He will find the descriptions of the bones clear and amply detailed, the anomalies of each mentioned, and specifications of their individual history, as to their period of ossification and development—the latter being a peculiarity of this work among all the systematic treatises on anatomy in the English language. (See the American Editor's preface.) We have nowhere seen a more interesting and more lucid explanation of the intimate structure of bone,—the wise provision made for the circulation of blood through its dense tissue, and the circumstances and conditions which attend its development and progressive growth. Indeed, this book must be regarded as the fountain head of our knowledge regarding this latter point: for to Dr. Sharpey, more than to any other, is due the merit of having successfully studied the "*intra-membranous*" mode of ossification.

There are some points still in doubt in the history of the osseous tissue. Thus with regard to the mode of production of the lacunæ, or the corpuscles of Purkinjé, as they have been termed, differences of opinion exist as to whether these little feeders, as it were, of the minute vascular canals of the compact structure, are produced from the original cartilage cells, by some change of action; or from the nucleus of these cells; or whether they are not little vacuities left in the ossifying mass by the unequal deposition of the bony matter. Dr. Leidy records observations at page 91, which inclines him to adopt the first view, that of Schwann. The observations were made upon the os frontis of a human embryo, measuring two inches from heel to vertex, the meshes of the osseous rete filled with cartilage cells contained in a transparent matrix or hyaline substance. He says, "Upon examining the border of the bone, I noticed a system of reticulated osseous fibres, proceeding from the primitive ossific rete into the intercellular substance of the cartilage cells, apparently by a deposit of earthy salts, in a linear direction. In such positions, I observed that the cartilage-cells had already protruded, or had connected with them the canaliculi; and these appear at this time only, because several cells which I noticed at the edge of the primitive bony rete, partly enveloped in the osseous deposit, had the canaliculi passing into the latter, while on the unossified or cartilaginous side, none had as yet been developed. The cell wall has until now apparently remained unchanged, but commences to blend or fuse itself with the intercellular substance, and with the secondary osseous fibrillæ. The Purkinjean corpuscles, which are perfectly formed in the osseous structure at this time, have the same diameter, or nearly so, as the cartilage corpuscle from which they originated, and they still contain a granular nucleus, readily brought into view by iodine, which corresponds to that of the cartilage corpuscle, and has about the same measurement. At a later period the nucleus of the Purkinjean corpuscle appears to dissolve away."

With reference to the mode in which the bones increase in length, the authors incline to the opinion that it is not by interstitial deposit. This has always seemed strange to us, and anomalous; since, in other organs, an interstitial growth is manifest. And, as Dr. Morton remarks, in his recent treatise on anatomy, p. 29, "the fact of such an interstitial deposit in bones is deducible from the circumstance, that the inequalities of a long bone are removed further from its centre as the shaft elongates. Thus, the trochanter minor of the os femoris, although it is below the terminal epiphysis, constantly removes from the centre of the shaft of the bone, until this has ceased to lengthen.

Our space will not admit of any further notice of this portion of the work before us. We can merely enumerate a few additional items of interest, which have particularly attracted us in reading its pages; such as the description of the intermaxillary bone of the human embryo,—a portion of the superior maxillary, which had not been observed as a normal condition of the human bone until it was recently discovered by Dr. Leidy (see p. 143); the analogy drawn between the cranial bones and the vertebræ; the description of the pelvis.

We proceed to notice the chapters on Myology,—passing over those which describe the areolar, fibrous, elastic, and cartilage tissues, the synovial membranes, the articulations, and the fasciæ; although they are all written with great care, and embody all that is known that is interesting and instructive, concerning the anatomy of these structures.

In treating of Myology, the same course is pursued as with the other tissues: the general anatomy and histology of the tissue is first given, and then follows the description of the individual muscles, with the best method of dissecting each particular region of the body for the display of its motor apparatus. The situation and relations of the muscles are well detailed, and their actions fully explained; and anomalies of situation and condition are noted, when any such exist. Both divisions of the subject are illustrated by numerous drawings; but those connected with the special anatomy of the muscular system, though correct, are almost all too small, it appears to us, to afford much assistance to the student; however, this very circumstance, may, happily, have the effect of inducing him to seek better illustrations in the dissecting-room.

All the points of interest belonging to the general anatomy of the muscular tissue are explained as fully as the state of positive knowledge on this subject will permit. Certainly, no systematic treatise on anatomy in our language combines more amplitude of detail and accuracy of statement concerning these subjects than the one before us: the results of the investigations of Mr. Bowman, Wilson, Dr. Sharpey, and the numerous continental anatomists, are here all newly arranged and set before the student. We are pleased to see several new observations and inferences of Dr. Leidy interspersed with those of the others. Thus, in speaking of that "vexata quæstio," the mode of connection between the extremities of the muscular fibres and the tendinous tissue, he says, "The filaments of areolar tissue, which form the sheaths of the muscular fasciculi, for the most part wind diagonally around the latter, occasionally passing in between the fibres, and intermingling with some fine filaments of elastic tissue which are found in this situation. The sheaths are also connected together by filaments from them, having the same diagonally crossing course.

"At the extremity of the muscular fasciculi, the filaments of the areolar sheaths become more or less straight, and combine with the fibrous filaments originating in this position, to form the tendinous connection of the muscle." P. 319.

This explanation, besides being very ingenious, shows the wise economy by which the same tissue is made, by a slight modification of disposition, to assume two different and opposite properties: each fibre, or bundle of fibres, of the areolar tissue when straight is inelastic; but it is rendered virtually elastic, and is thus adapted to the varying length of the muscle in which it is placed, by being disposed in a special manner around the latter, as we would arrange a piece of wire to make the coil springy: on the other hand, when an unyielding cord is required, upon which the muscle may exert its contractile power, the fibres of the areolar tissue which pervade the muscle are collected into a straight bundle, and thus constitute the tendon. We see other valuable annotations from the same pen, touching the reality of the division of the muscular fibre into component fibrillæ, and transverse disks; the persistence of the nuclei in the sarcous substance, &c.

This part of the work is concluded by copious tables, in which the muscles are grouped together in the order of their position in dissection, and also according to their actions.

Angeiology is the subject next considered, embracing the organs of the circulation, together with the associated system of lymphatic and absorbent vessels. Nearly two hundred pages of the work are devoted to the description of this important part of anatomy.

The account of the circulatory apparatus is taken chiefly from the special treatise on this subject by Mr. Quain. It comprises dissertations on the development and structure of the heart, its weight and dimensions, and its action, both in the fœtus and in the individual after birth; an interesting chapter on the blood; the general anatomy of the arteries, veins, and capillaries, and the special and surgical anatomy of the two former in full detail. One of the great excellences of this portion of the book consists in the care with which the anomalies in the course and distribution of the chief vessels are described, and the relations which they bear to the neighbouring structures: the surgeon will find here an admirable work for reference. We have only to regret that the drawings are so small.

Next in order are several chapters devoted to the description of the epidermic and epithelial tissues, the pigment cells, the adipose tissue, the serous and mucous membranes, the skin, and its complicated apparatus of associated structures, and a general account of the secreting glands.

The description given of the organs of respiration will be found to be exceedingly complete and interesting, as regards their general and intimate structure and development. We shall notice only one point. It has generally been supposed and taught, that the lobules of the lungs did not communicate with each other, but that the air-cells of the individual lobules admitted of a free interpassage of air by means of lateral openings; and injected and corroded specimens of the lungs have been exhibited, as substantiating this opinion. It seems, however, that, from recent careful examinations made by Rainey, Rossignol and others, this idea is incorrect—that no such intercommunication exists between the cells of the separate lobules. "The cells themselves appear like polyhedral alveolar cavities, separated from each other by thin and rather shallow intervening septa, and of course opening into the air-passages. They do not open into one another by anastomosis or lateral communication, but freely communicate through the medium of the common air-passage to which they belong." P. 118, vol. ii. And with reference to this, Dr. Leidy adds a note, accompanied by a very satisfactory drawing, showing that "there are two sources of error which may lead to the opinion that the air-cells of the lungs directly and freely intercommunicate: one is, the liability of confounding intercellular areolar tissue, when inflated, with the air-cells themselves; the other, the danger of mistaking the bronchioles for air-cells." P. 107, vol. ii. The drawings connected with this portion of the work are very beautiful, and are really *illustrations* of the textual descriptions.

In the department of Neurology, we venture to think that the present treatise is superior to any similar work in the English language. The account which it embraces of the nervous system, although exceedingly voluminous, may be read with positive pleasure. Very different is it, in this respect, from most other systems of anatomy, which, by their confused descriptions, and formidable array of names without intelligible meanings, have rendered this the most wearisome and unsatisfactory department of anatomical study.

The minute investigation of the nervous substance as regards its intimate structure, is more difficult and laborious probably than that of any other tissue, chiefly perhaps on account of its extreme delicacy; hence the many conflicting statements concerning it.

Our restricted limits will scarcely allow us to do more than call the attention of our readers to some of the sections on the nervous system, as here elaborated, which will, we think, be found particularly interesting. We would specify the author's account of the origin and terminations of the nerves, concerning which much discrepancy of statement exists; the pages devoted to the consideration of the cerebro-spinal axis, and the important tables respecting the weight of the encephalon and its different parts, absolutely, and as compared with the rest of the body, in the two sexes, and at different ages; the description of the internal structure of the brain, and medulla oblongata; and to the descriptive anatomy of the uterine nerves, concerning which it will be seen that the author does not concur with Dr. Lee in his opinions regarding the nerves of the gravid uterus. He says, at p. 356, vol. ii., "The recent dissections of M. Beck (if, as they seem to be, accurate), prove that the nerves do not alter in their thickness during pregnancy; at least, that no alteration occurs before they enter the tissue of the uterus; while that organ itself, and the vessels which supply it, undergo a remarkable augmentation in size."—"The representations of the gravid uterus and of the unimpregnated uterus of a person who had borne children, which are contained in his paper, show the nervous fibrils to be of the same size in both cases; and the author (it is stated in a note, p. 222,) has ascertained, by another dissection, that no difference in thickness is perceptible between the nerves of the virgin uterus and those just alluded to."

The organs of the senses are next described, with considerable minuteness of detail. The precise mode in which the nerves of special sense terminate, is considered by the authors to be still a matter of doubt.

One hundred pages are devoted to the digestive organs. This section contains an exceedingly complete history of the teeth, comprising the results of the labours of the many distinguished anatomists who have recently made this their study, and well illustrated by good drawings; a description of the structure of the tongue and salivary glands; a full survey of the whole alimentary canal, its intimate structure and development; and an enlarged account of the important glandular and other organs of the abdomen concerned in digestion. This part of the work displays a great deal of research, both original, and among the writings which are most authoritative on the subjects treated of, many of which are not accessible to students and practitioners in this country. The ordinary physical appearances of the organs are very clearly pointed out, —a matter of much importance to those who wish to study the post-mortem phases of disease, since it furnishes them with an excellent standard of the healthy condition of the structures.

In the description of the liver, the opinions of Mr. Kiernan, which have been very widely made known, are looked upon as the most correct, and the most explanatory of the various morbid conditions to which this organ is prone. The researches of other more recent anatomists, however, are recorded, whenever they substantiate or conflict with the statements of the English investigator; so that a very fair view of the state of our knowledge concerning the liver is here presented. The American editor has also enriched the text with some observations upon the structure of the organ as it exists in other animals.

The structure and functions of the spleen have occupied the attention of anatomists in a degree proportionate to the doubt which rests upon this organ. The result of their studies has been to unravel more thoroughly the intricacies of its organization, without, as yet, furnishing any positive information as to its uses in the economy. The most interesting facts mentioned in the volume before, us concerning this organ, are those which refer to its internal tunic. Dr. Sharpey has been accustomed to refer in his lectures to this coat, as containing, in addition to the interlaced bundles of cellular tissue mixed with fine elastic tissue, "pale, soft fibres, apparently plain unstripped muscular fibres, resembling those of the middle coat of the arteries." P. 498. Recently, too, Professor Kölliker has made many observations upon different animals, which have induced him to conclude that the spleen is a "muscular organ." "The muscular fibres are of the plain variety, and mixed with elastic or nuclear fibres. In some animals, as the pig, dog, and cat, they exist in the allugineous or proper coat, the sheaths of the vessels and the trabeculæ; in the rabbit, they are wanting in the coat; and in the ox, according to Kölliker, they are found only in the small-sized and microscopic trabeculæ, the rest of the trabecular structure and proper coat consisting merely of elastic and cellular tissue. He finds that the muscular tissue of the spleen is, for the most part, made up of short, pale, flat fibres, from $\frac{1}{600}$ to $\frac{1}{240}$ inch long, having oblong nuclei. As to the human spleen, he could discover muscular structure neither in the proper coat, nor in the larger trabeculæ; but the fine microscopic trabeculæ appeared to be made up of elongated cells, with round nuclei, which he is disposed to regard as elements constituting a muscular tissue. He could obtain no unequivocal evidence of contraction, on irritating the spleen in recently killed animals." P. 498.

The urinary organs, and the organs of generation in both sexes, are treated of in the same comprehensive and detailed manner. And the work is closed with a chapter on the surgical anatomy of the walls of the abdomen and pelvis, with reference to the operations which may be required for the relief of hernia, and of stone in the bladder; thus completing the remarks on the surgical relations of the different organs,—the arteries having been considered in this connection in the chapters devoted to the organs of the circulation.

We close our notice of this work, expressing the gratification which we have derived from its perusal, and our conviction that all who consult it will feel similar satisfaction. F. W. S.

Art. XXI.—*Seventh Annual Report to the Legislature, relating to the Registry and Returns of Births, Marriages, and Deaths, in Massachusetts, for the year ending April 30th,* 1848. By Wm. B. Calhoun, Secretary of the Commonwealth. 8vo.: pp. 56.

Report of the Secretary of State, of the Number of Births, Marriages, and Deaths [in the State of New York] for the year 1847. 8vo.: pp. 56.

The latter of these documents is, we believe, the first fruit of "An Act providing for the Registry of Births, Marriages, and Deaths," passed in April, 1847, by the Legislature of New York. We hail it with no small pleasure, as the harbinger of much interesting intelligence to be anticipated from the extension of the registration system, over a great State, embracing a population of more than 2,000,000. It would be unreasonable to expect perfection at the outset, but this is a promising beginning. Massachusetts set the example many years ago. New York has succeeded, and other States are preparing to follow; so that we may soon expect to have the system of registration spread over the largest portion of the United States. The reports, collated from the materials thus collected, cannot fail to furnish data of the highest value to the statesman, political economist, and philanthropist. They will show the exact condition of population in different places, and at different times, demonstrate advantages, where these exist, and lead to the detection and correction of evil influences, of whatever kind these may be. They will furnish the means of comparing the conditions of population at different periods, and thus not only serve the exigencies of the present day, but prove highly interesting to future generations.

By the provisions of the New York registration act, the clerk of each school district in the State is required to make returns to the town clerk of the town (township) in which his district may be situated. The town clerk is required to report to the county clerk, and the latter-named officer reports to the Secretary of State. Blank forms, with instructions for making out the primary reports, were sent by the Secretary of State to the several county clerks, and by these last distributed to the town clerks.

Reports have been received from every county in the State, although one or two were somewhat tardy in handing them in. It however appears, from the returns of the several county clerks, that many of the townships made no reports, and that the only *city* from which reports were received, is New York, and this only in part, namely, the usual bill of mortality. Consequently, the present report to the legislature will not constitute a full and complete return of the births, marriages, and deaths, in the entire State, for the year 1847.

The whole amount of births reported, was 35,897; of marriages, 11,437; of deaths, 17,263. This statement of mortality only includes the returns from the interior of the State, to which we may add the amount of the city of New York, 15,788; making the sum total of deaths reported, 33,051. This, of course, is far short of the actual mortality. But for many places the returns are so full as to be highly valuable, the diseases causing death being given, and the ages at death stated. The statician would certainly desire fuller information, but, in its absence, will be glad to receive even these partial data. Massachusetts, which has been rendering annual reports for seven years, still exhibits a very great deficiency in the amount of mortality. In 1847, the sum total of deaths reported through the registration returns, is 11,063. Now, supposing the population of the entire State to be in that year 850,000, this would give only 1 death to 77 inhabitants; a ratio far below what may be expected, when complete returns shall be procured. The returns of mortality for the whole State of New York, for 1847, amounting to 33,051 deaths, gives only 1 death to about 82 inhabitants, supposing the entire population to be 2,750,000. As the true rate, according to the most favourable estimate, is probably not less than 1 death per annum in every 45 of the population, the return made for 1847 represents only about half the actual mortality.

It must be observed that this report of the births, marriages, and deaths, in the State of New York, is so made as to constitute two distinct documents. One of these is the Report of the Secretary of State for the several counties in the interior; the other, the Annual Report of the City Inspector of New York, including merely the bill of mortality for that city. This last has already come under our notice, in previous numbers of this Journal. We shall, therefore, restrict ourselves to the registration returns for the interior of the State.

Births.—Of the 35,897 births reported for 1847, from the several counties in New York, the males constitute 18,722; the females, 16,988. In 187, the sex is not given. There were 242 black males, 225 black females; and, in 695 births, the complexion was not designated. Fifteen pair of twins, and 118 illegitimate births are reported.

The highest number of births occurred in August, viz. 3,370, and the fewest in January, viz. 2,327. The respective amounts for the different months stand as follows:—

January,	2,327.	July,	3,243.
February,	2,501.	August,	3,370.
March,	3,079.	September,	3,301.
April,	3,000.	October,	3,202.
May,	2,974.	November,	2,940.
June,	2,860.	December,	3,016.

In 83 cases the month is not stated.

Marriages.—Of the 11,437 marriages reported, by far the largest number occurred in the fall and first month of winter, and the smallest amount in the spring months, as will be seen by the following statement exhibiting the proportions for each month:—

January,	898.	July,	942.
February,	841.	August,	770.
March,	820.	September,	1,238.
April,	612.	October,	1,354.
May,	701.	November,	1,151.
June,	730.	December,	1,348.

Of the persons married, there were

3,338 under 20 years.
8,383 between 20 and 25 years.
4,292 " 25 " 30 "
1,300 " 30 " 35 "
753 " 35 " 40 "
415 " 40 " 45 "
260 " 45 " 50 "
178 " 50 " 55 "
113 " 55 " 60 "
74 " 60 " 65 "
119 " 65 " 70 "
8 over 70 years.
3,641 ages not given.

Deaths.—Of the 17,263 deaths reported from the several counties, 8,613 were of males, and 8,575 of females. In 75 cases, the sex is not given. The deaths of blacks constituted 190 males, 204 females. In 591 cases, the complexion is not stated.

Of the conditions in life of the deceased, it is mentioned that 3,352 were married males, 2,917 married females, 5,400 unmarried males, 4,318 unmarried females. In 1,276 cases the condition is not given.

In 15,290 deaths, reported from various specified causes, 7,726 were males, 7,564 females. The male deaths in the first year of life were 1,033, the female, 833.

	Males.	Females.
Of the deaths from 1 to 2 years, there were	590	584
“ 2 “ 5 “	818	723
“ 5 “ 10 “	418	407
“ 10 “ 15 “	211	236
“ 15 “ 20 “	276	432
“ 20 “ 25 “	431	537
“ 25 “ 30 “	390	445
“ 30 “ 40 “	535	672
“ 40 “ 50 “	494	514
“ 50 “ 60 “	502	445
“ 60 “ 70 “	508	503
“ 70 “ 80 “	579	546
“ 80 “ 90 “	391	295
“ 90 “ 100 “	89	71
“ 100 and upwards	15	12

Ages not designated, 755.

In one of the tables, there are about eighty different professions and occupations of the deceased given, from which the average duration of life of the several callings, is estimated. But the number of cases is much too limited to afford, in most instances, even an approximation of the real value of life in the various occupations. We will, however, give a few of the details under this head.

The average age at death, excluding all under 20 years, of

36 clergymen,	was	56 years.	36 milliners,	“	30 years.
18 lawyers,	“	44 “	5 pensioners,	“	84 “
57 physicians,	“	51 “	251 servants,	“	44 “
2706 farmers,	“	57 “	60 seamstresses,	“	31 “
13 saddlers,	“	43 “	44 blacksmiths,	“	38 “
4 farmers,	“	66 “	33 boatmen,	“	33 “
30 shoemakers,	“	54 “	50 tailors,	“	37 “
74 merchants,	“	38 “	11 painters,	“	49 “
535 mechanics,	“	44 “	28 tailoresses,	“	33 “
90 school teachers,	“	28 “	7 printers,	“	29 “
70 carpenters,	“	49 “	34 sailors,	“	40 “
1136 housekeepers,	“	44 “	11 millers,	“	46 “
22 weavers,	“	57 “	1 grass widow (?)	“	35 “
9 masons,	“	45 “	9 wheelwrights,	“	48 “
404 labourers,	“	41 “			

The diseases which proved most fatal, in 15,290 designated cases, were as follows:—

	Males.	Females.	Total.
Apoplexy,	99	86	185
Enteritis,	193	154	347
Congestion of the brain,	26	23	49
Dropsy of do.	118	126	244
Inflammation of do.	230	203	423
Bronchitis,	30	27	57
Cancer,	58	78	146

	Males.	Females.	Total.
Casualties,	319	108	427
Childbirth,		101	101
Cholera infantum,	41	35	76
Cholera morbus,	28	23	51
Bilious colic,	36	16	52
Consumption,	1,388	1,942	3,330
Convulsions,	59	52	111
Croup,	300	264	564
Delirium tremens,	41	1	42
Diarrhœa,	142	141	283
Diabetes,	17	10	27
Dropsy,	299	365	664
" of chest,	9	9	18
Drowned,	38	9	47
Dysentery,	370	348	718
Epilepsy,	7	13	20
Erysipelas,	59	86	145
Fever,	224	220	444
" Bilious,	120	87	207
" Congestive,	19	18	37
" Intermittent,	10	5	15
" Puerperal,		28	28
" Remittent,	9	7	16
" Scarlet,	231	214	445
" Typhus,	215	163	378
" Ship,	60	48	108
Fits,	149	121	270
Gravel,	35	1	36
Heart, disease of,	94	72	166
" dropsy of,	9	10	19
" enlargement of,	8	5	13
Hemorrhage,	12	12	24
" of lungs,	7	2	9
" uterine,		2	2
Inflammation,	144	111	255
" of the lungs,	328	276	604
Insanity,	9	7	16
Intemperance,	63	4	67
Liver complaint,	66	43	109
Lockjaw,	12	3	15
Measles,	99	122	221
Old age,	386	386	772
Palsy,	102	97	199
Scrofula,	51	39	90
Small-pox,	48	21	69
Still-born,	20	20	40
Suicide,	32	10	42
Summer complaint,	44	43	87
Unknown causes,	477	502	979
Varioloid,	2	1	3
Whooping-cough,	80	100	180
Worms,	25	30	55

The table, from which the above extracts have been made, has evidently not passed through the hands of any one qualified to put it into a desirable shape. Certainly no one connected with the medical profession could have had a hand in drawing it up, still less, any one acquainted with the nomenclature and classification recommended by the American Medical Association.

Deaths from similar diseases are placed under different heads, and we have the names of diseases hard to conjecture—such as "nervousness" "spine" "St. Anthony's dance" "rattles;" St. Anthony's dance is *perhaps* intended for St.

Vitus's dance, or chorea. But still, with all the faults, we are glad to get hold of details, as they enable us to draw comparisons between the mortality of diseases in the country, and cities, with the last of which we have been long familiar. On this account we have drawn more largely upon the table, showing the causes of death, than perhaps comports with the nature of our notice.

We now proceed to the Massachusetts document, which embraces the registration period of one year, ending April 30th, 1848. Considerable deficiencies are still apparent in the execution of the registration law in this State, notwithstanding the time that has elapsed since its first adoption, and the intelligence brought forward to promote its operation. The primary statements reported from the several towns, are accompanied with a great many notes which indicate a strong interest in the cause, and a desire to have the system perfected. Who could believe that the city of Boston, so far-famed for the intelligence of her citizens, would be open to such a charge as is implied in the following paragraph from the report of the Secretary of State of Massachusetts.

"The continued neglect of the city of Boston, to aid the government in the accomplishment of the invaluable purpose contemplated by the law, ought not to be overlooked. This neglect cannot be in consonance with the intelligence and wisdom which are so conspicuous in the noble and enlightened public spirit of Boston. The bearing of the results and facts, sought for by the requirements of the law, on interests of indisputable importance, cannot fail to be seen by all thoughtful observers."

"To improve man's physical condition," continues the Secretary, "and thus to contribute to his moral advancement, is the great purpose of the statistical views and facts, which the law in question strives to bring to light. More than ever important does this purpose become at the present moment, when our commonwealth and country lie open to unlimited emigration from the Old World. Unspeakably interesting and vital should this view of the subject be to the city of Boston."

Births.—The table giving the births in the several counties for each month in the year, shows that, of the total amount 16,322 reported, 8,115 were males; 7,882 females; 140, sex not stated; 82 males, and 77 females, for which the month of birth is not given. The amount reported for each month is as follows:—

	Males.	Females.	Not designated.	Total.
January,	655	678	17	1350
February,	750	731	20	1561
March,	790	723	15	1528
April,	732	700	20	1452
May,	614	551	9	1174
June,	541	551	9	1101
July,	613	657	10	1280
August,	698	657	6	1361
September,	717	713	7	1437
October,	675	684	7	1366
November,	644	616	7	1267
December,	686	621	13	1320

It thus appears that the highest number of births occurred in the month of March, and the lowest amount in June; February, March, and April all make monthly returns far above the average. Reverting to the months in which the conceptions took place, nine months previous, we find the corresponding months of conception to be May, June, and July. The offspring of plurality-births amount to 308, of which 140 are designated as males, and 161 females.

Marriages.—Of the 5,287 marriages, the highest number in any one month was 760 in November, and the lowest 278 in July.

There are tables exhibiting the ages of the marriages between bachelors and maids (3,869); bachelors and widows (111); widowers and maids (510); widowers and widows (200).

The instances where both parties were under 20, are only 47. The most marriages took place between the 20th and 25th year. Namely, of 705 men between

20 and 25 to 705 women under 20; 950 men between 20 and 25 to 950 women between 20 and 25; 115 men between 20 and 25 to 115 women between 25 and 30. Of the marriages of men between 25 and 30, 252 occurred where the women were under 20; 662 where the women were between 20 and 25; 284 where the women were between 25 and 30; 23 where the women were between 30 and 35. Of the marriages of men between 30 and 35, 38 occurred where the women were under 20; 112 where the females were between 20 and 25; 80 where the females were between 25 and 30; 30 where the females were between 30 and 35.

Deaths.—The abstract of the returns of deaths are given in very convenient forms, which we recommend as examples to our New York friends who may be charged with making out tabular statements of an additional year. There is first a table showing the diseases which proved fatal, the sexes and ages of the deceased, with the month when the deaths occurred, together with the places of birth. The diseases causing the deaths are arranged in alphabetical order, which is exceedingly convenient for reference. Then follow other tables, in one of which the causes of death in the several counties of the State are arranged, according to the classification recommended by the American Medical Association; whilst in another the causes of death are compared with those reported in the two previous years, 1846, 1847. The convenient form and interesting views presented in these tables reflect great credit on those concerned in making them out. The concise views presented are the results of much patient labour, as any one acquainted with the nature of statistical calculations will readily perceive. From the tables presenting the causes of death in the rural population of Massachusetts, and also that showing the influence of occupations over the chances of life, we should be glad to extract many of the interesting facts displayed, but cannot now do so, having already infringed too much upon the space allowed for a bibliograph. G. E.

Art. XXII.—*On the Cryptogamous Origin of Malarious and Epidemic Fevers.* By J. K. Mitchell, A. M., M. D., Professor of Practical Medicine in the Jefferson Medical College of Philadelphia. Philadelphia 1849: 8vo., pp. 137. Lea & Blanchard.

The origin of the several forms of fever that ordinarily prevail as endemics, in particular localities, or spread, occasionally, over extensive districts, as destructive epidemics, has ever been a subject of curious inquiry to the pathologist. To account for the production and spread of these diseases ingenuity has been taxed in the formation of plausible hypotheses, in evidence of the truth of each of which an array of apparently incontrovertible facts and cautious observations has been adduced by its author and advocates. Important, however, as is the subject, and industriously as it has been pursued, no one of the theories that have been heretofore advanced, can be considered as satisfactory, and we have still to confess our ignorance of the nature of the morbific cause to which fevers, whether endemic or epidemic, owe their origin. We may, it is true, be able to indicate, with some degree of certainty, a few of the leading circumstances under which one or other of the forms of fever is most liable to occur, but still the entire subject of the etiology of this class of diseases is open to investigation—and the demonstration of the cause by which they are produced, may still crown with fame the name of some industrious inquirer.

In the volume before us, Dr. Mitchell has announced a theory of the origin of malarious and epidemic fevers, which, if it be not entirely original with him, he will have the credit of having defended and illustrated by a series of facts and arguments as plausible, and apparently as conclusive, to say the least, as those upon which are based either of the theories that have preceded it. He has presented, in bold relief, the leading defects of the explanations generally received, and has attempted, with much ingenuity, to show that these defects are satisfactorily supplied by rejecting the common doctrines of the causes of malaria, and adopting the cryptogamous plants generally as the chief agent in its production.

"Of the cryptogamous plants, the *fungi*," Dr. M. remarks, "are distinguished for their *diffusion and number;* for their *poisonous properties*, and their *peculiar season of growth;* for the *minuteness of their spores*, and for their *love of darkness and tainted soils, and heavy atmospheres*."

But while he presents the claims of the fungi as the *principal cause* of fevers, our author does "not mean to exclude the occasional agency of other cryptogamous vegetables."

Dr. M. is not so presumptuous as to suppose that he has, in the volume before us, fully demonstrated the truth of the doctrine he advocates. In undertaking the adventurous duty of developing a theoretic result, he does not expect "to do more than obtain for it, at present, a hearing and an examination; since its demonstration, if ever completed, must exact, for years, the enlightened and patient toils of many philosophers."

"Imitating," he remarks, "the natural philosophers, I have constructed a theory, not to be esteemed devoutly true, but as, in the present state of knowledge, the most perfect explanation of the known phenomena of the case; and as the least exposed to the many objections easily brought against any other hypothesis."

During a careful perusal of the several chapters in which the doctrine of the cryptogamous origin of fevers is developed by our author, we were often struck with its great plausibility, and the numerous phenomena connected with the history of epidemics, hitherto unexplained, which it readily and, apparently, correctly accounts for. That the doctrine is attended with difficulties is not, however, to be concealed. Some of the leading objections to it are noticed by Dr. Mitchell, and attempted to be removed.

One of these objections is, "that the cause assigned is not adequate to the rapid production of the effect." That it is not probable that a minute vegetable, however distributed, can contaminate the air of a large marsh or field, in the course of a few minutes or hours. To this Dr. M. replies—

"When we remember how minute a quantity of a reproductive organic virus is, in other cases, necessary to the infection of a proper subject, we might leave the argument to that defence alone; but I think there is a better one, in the wonderful growth and ready diffusion of the plants to whose nocturnal potency I am inclined to ascribe malarious fevers.

"A mushroom growth is proverbial, in every language. In a single night, under favourable circumstances, leather, or moist vegetable matter, may be completely covered with mould. Of the more minute fungi, some species pass through their whole existence in a few minutes, from the invisible spore to the perfect plant. Lind says, that the first rains in Guinea, have been known to make the leather of shoes quite *mouldy* and rotten in forty-eight hours; showing that the plants which disorganize the leather must have drawn their nutrition, even from its heart, in that time, and, by many successive generations, extended themselves over its total surface. Mr. Berkeley describes a *Polyporas squamosus* which, in three weeks, acquired a circumference of seven feet, five inches, and a weight of thirty-four pounds. The *Polyporas frondosus* described by John Bapt. Porta, sometimes transcends a weight of twelve pounds in a few days. The *Bovista giganteum*, on the authority of Carpenter, the eminent physiologist, has been known to increase in a *single night*, from a mere point, to the size of a large gourd, estimated to contain four thousand seven hundred millions of cells; a number which, when counted at the rapid rate of three hundred per minute, or five per second, would take the whole time of one person, *night and day for three hundred years*. A square mile contains upwards of 3,000,000 square yards, or 27,000,000 square feet, so that a single *Bovista giganteum* may present, at evening, an almost invisible cell, and yet place, before morning, nearly 1,800 such cells in every square foot of a square mile.

"Notwithstanding the wondrous productions of a *single* individual of *one species*, Fries, the Swedish naturalist, observed not less than *two thousand species*, within the compass of a *square furlong*. The same author tells us, that he has counted above 10,000,000 of sporules, in a single individual, of the *Reticularia maxima*, so minute as to look like smoke as they rose in the air.

"Webster, when writing of the malignant fever of 1795, informs us, that *sound potatoes from market*, perished, in his cellar, in thirty-six hours; and we know now how they perished. It was a parasitic death.

"In the *Philosophical Transactions*, Lond. (vol. iv. p. 308, Abridg.), it is stated, that a green *mould* attacked a split melon, and took three hours to sprout, and six to ripen and produce, and let fall new seeds.

"At New York, during the pestilential season of 1798, Webster says, that he saw a cotton garment covered with dark gray-coloured spots of *mildew in a single* night, and that such events were, then and there, common.

"I might multiply examples of the rapid growth and extensive diffusion of fungi, which, like the lowest class of animals, seem to have a power of development and propagation inversely as their magnitude. The more minute the plants, the more rapid their multiplication; until, as they descend to those of the smallest scale, a microscope shows them in even visible growth. Nothing astonishes one more than to see in the bottom of a watch-glass, a drop of yeast swelling up, as the *torula cerevisiæ* unfolds itself, and exhibits a forest of fungi, where, but a few minutes before, only a spore or two were visible."

Another objection to the cryptogamous origin of malarious fevers is, the difficulty of accounting for the specific identity of these in all climates, while the plants of temperate differ from those of tropical regions.

To this our author replies, that the fungi are the natural inhabitants of all the various climates of the earth. "Like man, the fungi generally live in any climate, though there are among them some that infest only the steppes of Tartary, and others that revel solely on the sands of Zahara. *This ubiquity is one of their most peculiar qualities.*"

"But why is it then," Dr. M. remarks, "if the *same* fungi create diseases in Lapland and Senegal, that there is so fatal a difference in the intensity of them at these two places? As the fungi of a poisonous character possess acrid and narcotic properties, it is scarcely necessary to consistency to presume that the same are everywhere the cause of malarious fevers. Yet, if that were an imperative supposition, it would not embarrass the question materially, because naturalists affirm, that *the poisonous cryptogami are rendered yet more poisonous by increased temperature and moisture.*"

In reference to the objection drawn from the supposed difficulty of the sporules of the fungi passing into the circulation by the lacteals, absorbents, or the pores of the venous radicles, our author states that he has found them to be at least ten times as small as the chyle globules; consequently, there can be no difficulty in their absorption, so far as their magnitude is concerned. As to the selective power of the lacteals, and other absorbents, which may be supposed to present an impediment to the absorption of the sporules of the fungi.

"We know," remarks Dr. M., "that they suffer very many and various poisons to pass into the circulation, and that, in this respect, they are much less particular than our fathers imagined. Besides this, we know that fungous growths, both in man and the lower animals, have been found in places, to which their germs could have gained access only by the circulation, or by imbibition. There is, therefore," he concludes, "no good reason for doubting that the spores of fungi find their way to the channels of the circulation, as do the cells of exanthematous diseases, and the virus of syphilis."

After noticing the fact that the cause of the uniform excess of malarious diseases, at the end of summer and autumn, has been all along an interesting subject of discussion and wonder, he proceeds to point out the error of supposing that their general prevalence then is the result of the greater amount and activity of the decomposition of dead vegetable matter going on at this season—this decomposition being in fact the most active in May and June.

"When, after the previous autumnal death, and the disintegrating effects of winter frost, or soaking rains, the warmth and moisture of spring and early summer rapidly decompose the softened textures, to feed the tender spongioles of the swelling vegetation. The great chemists, heat, light, and moisture, are then most active; and the dead relics of the former year, prepared by *time, frost,* and *rain*, are ready for the process of decomposition, as the electrical and vital agencies of the countless and thread-like *radices* open up their intended storehouses of nutrition. Although, therefore, almost every one has supposed that the autumn is the season of the greatest decomposition, that process is really conducted in the spring and early summer *with a tenfold energy*, as may be easily recognized by the extraordinary smell of the earth after a shower at this season.

"Malarious diseases, therefore, are not probably the effect of ordinary vegetable decomposition, for they occur most when that is *not at or near to its maximum.* Everywhere they abound, when the general vegetation has just passed through its great orgasm. But there is another and special vegetation, *which, whatever may be the climate, has its spring time and summer in the autumnal season* of the year. On the exhausted *debris*, and the varied *exuviæ* of plants, weeds, and grasses; from root to leaf; under ground and above ground; feed a race of vegetables which wait for *their food* to the latest period of the season of heat, and then flourish most when the more perfect forms have completed their annual task, and submit to the inroads of these Goths of phytology."

"The *insalubrity of a place has the most constant relation to the habits of the living vegetation.* Whatever may be the temperature or humidity, the most unhealthy period of the year is, in any given locality, that when the phanerogamous vegetation has completed its annual task of growth, and flowering, and fruitage, and feels the weakness of an exhausting effort; and when to triumph, as it were over a worn-out foe, the crytogamous plants plunder and destroy it."

The third lecture of Dr. M. commences with a notice of the fact that the most common malarious diseases are not producible by exposure in sickly places *during the day time;* but that, whatever may be their cause, it seems to have activity almost solely at night;—*darkness* appearing to be essential to either its existence or its power. The author then proceeds to point out the insufficiency of the received theories, in the satisfactory explanation of this curious influence of night. Rejecting the several explanations that have been advanced, he remarks:—

"But when we observe the extraordinary tendency of fungous vegetables to develop their power only at night, we detect *another analogy between malaria and the fungi.* In vain do we search in the latter part of a day for young mushrooms. The early riser finds them in their prime and abundance. A field which at evening exhibited not a single plant, is often whitened by their little umbrellas in the morning. It is well known, writes Comstock, that this tribe of plants spring up almost everywhere, especially among decaying substances, and that *thousands* may be seen in the *morning*, where none existed the evening before.

"Even the more durable kinds of fungi appear to add during the day little to their bulk, preferring to grow almost solely under the eye of night; so that these anomalous vegetables not only choose for their growth the *season of vegetable repose*, but *the hours of vegetable* SLEEP. In another respect they are beings of contrast; for, while other vegetables are adding oxygen to the air from which they have extracted its carbon, these, as if they were averse to agreeing with phenogamous plants in any respect, are eliminating carbonic acid, having extracted from the undecomposed organic matter on which they live, its more peculiar animal elements, the hydrogen and nitrogen.

"Supposing that the minutest fungi possess the general properties of the class to which they belong, we may readily perceive what prodigious influence must be exerted on them by the damp rich air of a swamp—and if they have, as Heasinger alleges, a polarizing membrane, and consequently electrical relations to the polarized vesicles of a marsh mist, that mist, imbued with moisture, enriched by the terrestrial exhalations, and screened by the shadows of night, may form the most fruitful floating soil for the invisible cells of microscopic *cryptogami:* so that from the damp earth, or the nebulous air, or both, may come out, to propagate disease, the cells of an anomalous vegetation."

To the objection that, even if the fungi do grow at night, they should, sometimes at least, taint the day air of their vicinity, from which they can scarcely be entirely eliminated by an absorbing earth or a dissipating mist: Dr M. replies, by supposing that, if they have electrical relations to the mist, or ascend only during the night, the quantity necessary to produce morbid results may not remain during the day. Other reasons for the diurnal changes of salubrity in malarious regions, he bases upon certain habitudes of the fungi.

The remainder of the lecture is devoted to an exposition of the extraordinary association, as remarked by various authors, of fungous life with the existence and propagation of great epidemics, and intense endemics.

The subject of the fourth lecture is to prove that most of the fungi are poisonous, and produce diseases resembling marsh fever.

The author commences his fifth lecture by remarking that—"A theory of malaria should not, in this enlightened age, be received, which does not, at least plausibly, account for the apparent irregularities, seeming contradictions, and anomalous inconsistencies of the subject, which now so greatly obscure all the usual modes of explanation. In this respect I hope to show the very great superiority of that which, I presume is, by this time, not unfavourably viewed by my hearers. The diffusion of the fungi; their properties as a class; their acknowledged power of producing diseases of a febrile character marked by periodicity; their nocturnal power and autumnal prevalence; their love of the damp, dark places in which febrile epidemics delight; their obvious association with many cutaneous and some mucous diseases; their production of some contagious diseases of insects; and the progress of diseases from cattle, which are sickened by eating mildewed food, to human beings, sometimes by the use of the flesh, and sometimes, as in the cases reported by Vimat, by the simple exhalation of epidemic influence; all these details, numerous, diversified, and well sustained by authorities, should, I hope, induce my auditors to advance into the subject of the present lecture with, at least, some partiality for the new doctrine."

The cause of the latency of the malarious poison, Dr. M. conceives it is not easy to comprehend, unless we suppose that the poison received into the system is organic and vital, and that the phenomena of disease depend on its modification and reaction in the body. In this way, he remarks, we can also understand how such a poison may remain dormant, like some of the animal poisons, and that its absorbed germs may be stimulated not only by time but season, following laws which we are just beginning to study. He then adduces testimony to show that the poison of the fungi may remain apparently inactive for from an hour or two to even a day and a half, and that, too, when swallowed in large quantities.

"If," he inquires, "we were now to look for any known poison as explanatory of the latency of malaria, should we not be inclined to say, that only that of the fungi exhibited in this respect a strong analogy? We *know* of no other morbific agent whose action is so uniformly and irregularly postponed."

The arrest of the progress of malaria by a low wall, a common road, or a screen of trees; the exclusive prevalence of agues on one side of a street, and the progressive inroads of malarious diseases into certain localities, Dr. M. believes, can in no manner be so satisfactorily accounted for as by supposing the morbific poison to be a fungous one, progressively marching over the soil, sustained by the rich and pregnant moisture from the marsh. We can then understand why that the wall, or the road, or the wood, should limit its progress; besides which, the spores of all fungi are more or less electrical, and are, therefore, likely to be arrested by the trees of a wood.

The fact that, in some cases, malaria is active only in the immediate neighbourhood where it originated, while in others it seems to be wafted to a great distance from its apparent source, is, according to our author, readily explained by supposing the existence of germs susceptible of reproduction and progressive growth.

"The interruption of progress by a road or wall justifies this view of the mode of conveyance, and the many facts which show the narrow limits of the poisonous activity enforce it strongly. The place, the very spot, where the disease is found, must reproduce the cause of it for itself; and if the conditions of growth are not present, then will the spot be exempt, even if very near to the most poisonous places. Thus may we, and only thus, explain the occurrence of agues, yellow fever, and cholera, on only one side of a house, or one end of a room, or one side of a street, or wall, or road. A wind may, indeed, waft the spores in small quantities to a distance, but unless there are there the conditions essential to an adequate reproduction, the spores must lie dormant and harmless. For such reproduction, the marsh mist may be one of the most important elements; but that alone will not suffice, since we know that the disease is not proportional to its frequency or intensity. Other and very local conditions seem to exercise a peculiar power. Thus, a new house is known to resist disease better than an old one, and a residence protected by an annual cultivation immediately around it, is more safe than one which is encircled by lawns in grass. During some unusually sickly years, when scarcely an inhabitant of the skirts of the city escaped marsh fever, the wind set, often for a long period, directly from the infected regions into the heart of the city. In perhaps half a minute from the time when the south-western air left the meadows and pestilential borders of the town, it had crept into every chamber of the place; yet physicians here, well know that no disease of a malarious character invaded these chambers, which were, most of them, left open during every night of the sultry autumn.

"Writers entitled to credit and authority, by position and professional character, assert, that a gauze veil, or a gauze screen in a window, adds much to the security of the wearer, or the occupant of a chamber, in even the most unsound places. We can scarcely see how any gas or vapour, simple or compound, could be arrested by such a defence; but it is easy to suppose the detention of organized and comparatively bulky bodies, electrical and glutinous or moist."

By the cryptogamous theory of fever, Dr. M. explains, with much plausibility, the greater security from disease in malarious places, derived from artificially drying the air, and the reported exemption of cooks and smiths from the sweating sickness; there being no other poison save that of the fungi, so far as we know, which is thus disarmed of its virulence by dryness and heat. By the same theory, he explains the cause of danger from sleeping in mouldy sheets, and of the sternutation caused by turning over old books and papers.

Upon no other theory can we, he believes, so satisfactorily account for the partial introduction of yellow fever, and other non-contagious malarious diseases, into places always otherwise exempted from them, by means of trunks of unwashed clothes, brought from infected regions.

"Were," he remarks, "yellow fever a contagious disease, the examples of its propagation by fomites might be easily explained; but as its non-contagiousness is clearly shown by even stronger testimony than that cited in favour of its introduction by fomites, we are left to explain the difficulty, as best we may, consistently with a belief in its importation by trunks and clothes, and a thorough conviction of its total want of contagious power. There is left but one escape, and that lies in the supposition that fungi, when lodged in the trunks, among filth and animal matter, find, in darkness and dampness, the fittest imaginable growing place. That, in scarcely any of these cases, the disease advanced beyond those who inspected or handled the clothes, is only proof of the usual difficulty of sowing successfully tropical seeds in temperate climates, and of the inaptitude of fungi to grow under any but the nicely adjusted conditions upon which many of the tribe rely."

Of a similar character, according to Dr. M., is the question of the importation of yellow fever in ships.

"A tropical fungus, carried off in dark, damp, animalized holds of ships, or in the offensive clothes of sick or dead seamen, may, he supposes, be introduced into the summer clime of unaccustomed places, and there, as it came from, may go to, the shore, and be sometimes reproductive. That the germs, when once ashore, may slowly migrate landwards, and even by chance be carried or wafted to other neighbouring spots, where they may grow, and create new *foci* of disease; that the requirements of an exotic may make such visitations rare, and such dispersions unusual, and that the equatorial plants may be nipped and even totally destroyed by an unaccustomed frost.

"Through this theory, we can easily see why the disease may be imported, why it is imported rarely, and why it makes so slow a progress from the spot to which originally brought. It will also explain its non-contagious character, and even its occasional but rare visit to a hamlet or village. It may also account for its apparently spontaneous appearance in such places as Charleston, Savannah, and New Orleans, in which the winter may not be severe enough to kill the germs, but yet may so affect them as to make their reaction difficult or partial.

"It is only thus that we can comprehend how a *perfectly healthy crew* may bring with them, in the closed hold of their ship, the germ of disease, which, after their dismissal, may pestilentially affect the 'stevedores' who discharge her, or only the labourers *who disturb her ballast.* We can thus, too, explain the *usual pause* between the first set of cases caught by visitors to, or labourers on board, the ship, and the attacks upon the inhabitants of the vicinity."—"This interval is only to be explained by the supposition that germs of some kind have gained a footing on shore, and have germinated and grown more numerous. *It is the crop in the hold which produces the first set of cases. It is the crop on the land which causes the second.*

"It is only through the action of some organic cause, that we can explain the tenacity of the attachment of yellow fever to certain ships, and these, too, among the cleanest and best aired in the British service."

By assuming for the cholera a fungous origin, Dr. M. is convinced, that all the peculiarities connected with the etiology of cholera may be readily explained. Its singular local origin; its yet more singular progress; its apparent inconsistencies; its diffusion from a tropical point over the habitable globe; its invasion, in winter, of the frozen steppes of Tartary and Russia; its solitary advance over untravelled wastes or untenanted seas, as well as the progress of the poison along the route of streams, and its preference for the damp parts of cities, are all accounted for by the assumption, that its producing cause, the *semina morbi*, are germs or spores of the cryptogami.

"The cryptogamous theory," Dr. M. observes, in his recapitulation at the close of his sixth and last lecture, "will well explain the peculiar domestication of different diseases in different regions, which have a similar climate—the plague of Egypt, the yellow fever of the Antilles, and the cholera of India. It accounts, too, for their occasional expansion into unaccustomed places, and their retreat back to their original haunts.

"Our hypothesis will also enable us to tell why malarious sickness is disproportionate to the character of the seasons; why it infests some tropical countries and spares others; why the dry Maremma abounds with fevers, while the wet shores of Brazil and Australia actually luxuriate in healthfulness. The prolonged incubative period, the frequent relapses of intermittents, and the latency of the malarious poisons for months, can only be well explained by adopting the theory of a fungous causation.

"Finally, it explains the cause of the non-recurrence of very potent maladies better than the chemical theory of Liebig, and shows why the earliest cases of an epidemic are commonly the most fatal."

Our great object, in the short analysis we have thus presented to our readers of the work of Dr. Mitchell, has been to present an outline of the doctrine of the origin of malarious fevers, advanced by the author, and a general idea of the manner in which he has explained, by the agency of poisonous fungi, and the other cryptogami, the causation of diseases of a febrile character. To appreciate fully the validity of the arguments and facts upon which the author has based his views, the whole work must be read with attention; and as it is one calculated to interest, if it does not convince the reader, there will be few, we suspect, who will not be inclined to follow the author, step by step, in his "excursions into this new field of mingled reason and fancy."

The cryptogamous theory, even though it should not be established as the true explanation of the origin of malarious and epidemic fevers, by the results of future and more extended investigation, is, at least, ingenious and plausible. Its conception, and the skill with which it is developed and sustained, are highly creditable to its author, with whom we almost feel inclined to admit, that,

"It is the most consistent with the phenomena known at present, and much better sustained by established facts than any other hypothesis yet presented to the world." That "it has, therefore, the requisites of a philosophical theory which, in other and more exact sciences, would be accepted, not to be held as absolutely true, but as, in the present state of our knowledge, the most plausible and convenient explanation of the phenomena." D. F. C.

Art. XXIII.—*A Practical Treatise on the Domestic Management and Most Important Diseases of Advanced Life; with an Appendix, containing a Series of Cases illustrative of a new and successful mode of treating Lumbago and other forms of Chronic Rheumatism, Sciatica and other Neuralgic Affections, and certain forms of Paralysis.* By George Day, M. D., Fellow of the Royal College of Physicians, and Physician to the Western General Dispensary. 8vo. pp. 226. Philadelphia: Lea & Blanchard, 1849.

The means calculated to preserve the health, augment the comforts, and prolong the life, of the aged, as well as to ward off, if possible, that state of helpless decrepitude and second infancy which so often precedes, for a longer or shorter period, the final departure of those whose life has been extended to its utmost limits, is a subject worthy the investigation of the enlightened physician —equally so are the nature and treatment of the diseases most liable to occur in the advanced periods of existence, and render burdensome the remnant of life, or precipitate the hour of dissolution.

The important modifications which age produces in the character, phenomena, progress, and termination of diseases, have been pointed out by pathologists, while the therapeutist has indicated the precautions demanded in the application of our remedial agents, when, with the decline of life, the energies of the principal organs become impaired, and the regular and active performance of the several functions commences to flag.

Upon the hygiene and diseases of advanced life—as important and interesting as these subjects are confessed to be—we have, with the exception of the Practical Treatise of Dr. Day, no work in the English language in which the facts and observations that have been accumulated in relation to them are presented in a form adapted for study and reference. As Dr. Day correctly remarks, they have "been strangely overlooked, during the last half century, by the physicians of all countries—although many valuable essays and monographs on individual points connected with them lie scattered among the French and German periodicals, only one systematic work, that of Constatt, (*Die Krankheiten des höheren Alters und ihre Heilung. Erlangen*, 1839,) has been written during the period indicated."

Many thanks, therefore, are due to the author of the work before us, for having given his aid to supply the deficiency complained of. From the facts and observations derived from his personal experience, and from those recorded by other labourers in the same field, Dr. Day has been enabled to present a very able sketch of all the leading points connected with the hygienic management of the aged, and of the pathology and treatment of the principal diseases to which they are liable.

The work, though somewhat concise, contains much valuable matter—from which the young practitioner especially will gain many valuable hints to guide him when called upon to minister to the comforts or relieve the ailments of such as are in the decline of life.

The first four chapters, which treat on some of the most important changes occurring in the system in advanced life—on the preservation of health, and on the medical treatment generally during the period of old age, are replete with sound observations and judicious practical directions. The author's hygienic rules for the aged are admirable throughout, while his remarks on the effects, which, in the latter stages of existence, result from the action of the ordinary remedial agents, are evidently the result of close observation, guided by correct views as well pathological as physiological. The fifth chapter, on senile marasmus or wasting, can be considered only as a continuation of the fourth—for, as the author well remarks, true senile marasmus is not so much a disease as the gradual—physiological—wasting of the system—the true decay of nature. And although we may be able to alleviate the symptoms by well directed hygienic means, we cannot cure the disease, for it is the natural disease of death.

We extract from chapter sixth the following statements in reference to the diseases most fatal to persons in advanced life.

"In the first chapter, I mentioned incidentally many of the affections to which the changed state of the system rendered persons of advanced life especially liable. We must bear in mind that there is a wide difference between the most common and the most fatal diseases. It is of the latter that we are now treating. On referring to the Registrar-General's tables for the last five years—from 1843 to 1847 inclusive—I have found that the total number of deaths of persons aged 60 or upwards, occurring in the metropolis during that period, amount to 63,048. Of these, 15,136, or about two-sevenths, are recorded as dying from the effects of old age. I have no doubt that, if a proper examination after death was always insisted upon, the number would be wonderfully lessened, for very few die from sheer old age. But taking these numbers as we here find them, there are left 47,912 cases of death from actual disease.

"Death is ascribed to disease of the respiratory organs in 12,598 cases; to diseases of the nervous system in 6947 cases; to diseases of the digestive system in 3,141 cases; and to diseases of the circulating system in 2,841 cases. Besides these, we have 1076 recorded cases of diarrhœa, 748 of influenza, and 417 of erysipelas.

"The following table gives the comparative frequency of the causes of death at and after 60.

"Of 1000 persons who have attained that age, there die of old age			285.3
Diseases of the respiratory organs	Bronchitis	79.3	237.5
	Asthma	62.4	
	Consumption	35.7	
	Pneumonia	27.1	
	Hydrothorax	10.4	
	Other diseases	22.6	
Diseases of the nervous system	Apoplexy	53.0	130.9
	Paralysis	51.2	
	Other diseases	26.7	
Diseases of the digestive system			59.2
Diseases of the circulating system	Diseases of heart	51.3	53.5
	Pericarditis	1.3	
	Aneurism	0.9	
Diarrhœa			20.3
Influenza			14.2
Erysipelas			7.8
			808.7
Other diseases			191.3
			1000.

"The remaining 191.3 in the 1000 is made up, in a great measure, of cases of typhus and dropsy (neither of which have been tabulated by me, because the former is made to include all cases of continued fever, and because the latter is a symptom and not a disease, and may arise from very different sources); of cases of diseases of the urinary organs, of cholera, dysentery, cancer, gout, rheumatism, &c."

In his consideration of the several diseases of advanced life, Dr. Day commences with the diseases of the respiratory organs, and then treats in succession of those of the nervous, digestive, and circulating systems, the diseases of the genito-urinary organs, those of the skin, and, finally, the diseases of uncertain or variable seat, as gout, rheumatism, &c.

The author does not profess to give comprehensive essays on the various diseases embraced in the present treatise; but merely to explain the modifications that advanced life impresses on the different symptoms, and to point out the peculiarities in the mode of treatment that should be adopted during the declining period of the vital power. His remarks in reference to these two important particulars are always judicious, and are well adapted to facilitate the establishment of a correct diagnosis, and to lead to the most successful plan of treating the maladies of the aged.

As a specimen of the manner in which the diseases of advanced life are treated of by our author, we present the following extracts from his section (*sect.* iii.) on Cerebral Softening.

"Although cerebral softening may occur at any period of life, it undoubtedly claims to be regarded as essentially a disease of advanced age. The cases on which the following table is based are 221 in number; they are collected from the writings of Andral, Rostan, Bouillaud, Dechambre, Durand-Fardel, Fuchs, and Lallemand.

Age.	Number of cases.	Population at this age; the whole population being 20,000.	Proportion of cases in 1000 persons.
20 to 30	18	3000	6.0
30 to 40	14	2500	5.6
40 to 50	28	1800	15.5
50 to 60	33	1300	25.4
60 to 70	50	1000	50.0
70 to 80	64	500	128.0
80 and upwards	14	200	70.0

If the number of cases on record were larger, we should probably find that the proportional number occurring at and after the age of eighty, was higher than at any earlier period of life. Some conception of its frequency may be formed, from the circumstance that, out of one hundred and one cases of death from diseases of the nervous system, observed by Prus, twenty-three were due to cerebral softening.

"*Acute softening* appears, in more than half the recorded cases, to present no premonitory symptoms, and to induce loss of consciousness, and paralysis in the same sudden manner as cerebral hemorrhage. This is termed the apoplectic form. In other cases, its invasion is solely marked by a general or partial, but progressive weakening of the intellectual faculties, and by various modifications of sensation. When premonitory symptoms occur, they usually present themselves as intense headache, vertigo, formication, cramps, &c.

"In persons of sixty and upwards, the apoplectic form is the most common; there is sudden loss of consciousness, contortion of the features, and the limbs on one side are rendered more or less insensible to external impressions, and either lie immovable and devoid of all power, or else are powerfully flexed. Persons thus attacked often die in a few days without any return of consciousness; but in the majority of cases consciousness gradually returns, and the use of the paralyzed parts is, to a certain degree, restored. This apparent improvement is, however, transitory and deceptive, for a progressive torpor of the intellectual faculties is soon perceived, while the paralysis extends and becomes more perfect, and the patient, if not cut off by some of the complications to which I shall presently refer, dies in a state of coma.

"As the softening progresses, we sometimes (in about a quarter of the cases) have a considerable amount of frontal headache. Dullness of the intellectual faculties and loss of memory are almost invariably to be observed; the mouth is drawn on one side, and there is often strabismus. Patients complain of cramps, pains, a sensation of cold and formication in some of the limbs, and sometimes there is partial paralysis. Contraction of one or more of the limbs is a symptom, whose importance has, I think, been overrated by Lallemand and some other authors. It certainly does not occur in half the cases of which we have authentic records.

"Those who have made cerebral softening their especial study, assert that a very opposite class of symptoms is occasionally noticed; that there may be cerebral excitement, violent delirium, and convulsions.

"The rapidity with which the disease runs its course is sufficiently obvious from the following table founded on fifty-nine cases (twenty-seven of Durand-Fardel, sixteen of Rostan, and sixteen of Andral):—

"Death occurred 11 times during the first two days.
" 26 times before the fifth day.
" 43 times before the ninth day.
" 7 times between the ninth and the twentieth days.
" 9 times between the twentieth and thirtieth days.

"Death is seldom preceded by any febrile symptoms. It occasionally happens that the disease merges into the chronic form; and sometimes, but very rarely, there is a gradual remission of the symptoms, and a restoration to perfect health.

"*Chronic softening* presents the same class of symptoms as those we have already described. In the majority of these cases, the patient complains of a feeling of discomfort, headache, vertigo, and stupor, which may last for weeks and months; then follow more marked symptoms—difficulty in speaking, numbness, formication or pricking of the limbs, and especially of the fingers, partial loss of power and motion, shown, for instance, in one leg dragging in walking, or in the inability to grasp objects firmly.

"Contraction of the limbs, in these chronic cases, is much more frequent than entire loss of power, whereas the reverse holds good in acute softening: it must not, however, be regarded as a constant symptom, being absent in at least one-fourth of all the recorded cases; neither must it be regarded as a certain diagnostic sign of this disease; it is met with in connection with disease of the membranes, without any affection of the cerebral substance, in cases of mere cerebral irritation, &c. Pains in the limbs and joints generally accompany these contractions; they are usually much aggravated by motion, but not increased by pressure. There is commonly a partial, but scarcely ever a perfect loss of sensation in the paralyzed and flexed limbs. The face becomes partially drawn aside, and the features are devoid of expression. The memory is gradually lost, the ideas become confused, and all reasoning power disappears. It becomes difficult to speak, in part from the required words being forgotten, and in part from loss of control over the organs of speech. The mental condition of the patient is but a few shades superior to that of the idiot. The paralysis gradually extends, the power of retaining the contents of the bladder and rectum disappears, the limbs waste away, and yet the force with which they are flexed is almost incredible, and thus the patient sinks, utterly unconscious of his own pitiable condition. In some cases, the flexure ceases and the limbs relax shortly before death.

"Such are the ordinary symptoms of chronic softening. We occasionally, however, meet with cases in which extensive softening is revealed after death, but in which no perceptible symptom is appreciable during life; and again, in which, some time previous to death, the symptoms have much abated.

"Nothing very definite can be said regarding the duration of chronic softening. I believe it may go on for years. Death takes place in various ways; it is often dependent on the supervention of a more active head affection, and coma or convulsions close the scene; meningitis may be developed, or there may be cerebral or meningeal hemorrhage, or an abundant effusion of serum into the ventricles or the subarachnoid space. Many patients finally sink from pneumonia, or in consequence of bad sores on the sacrum."

"That there are often great difficulties in the diagnosis of cerebral softening, is a fact beyond all question; it may be mistaken for inflammation of the brain, or of its membranes; for congestion; for cerebral or meningeal apoplexy; or for morbid growths, or deposits in the brain. The diagnosis must be determined by the weighing of opposite probabilities.

"Although the prognosis must always be most unfavourable, especially in the chronic form, there is undoubted evidence that the disease is occasionally cured. Cases sometimes occur, in which all the symptoms we have described gradually disappear, and where there is an almost perfect return of sensation, and of the power of the intellect, and of motion.

"What are the causes of cerebral softening? No definite reply can be given to this question; but it is so often associated with arterial disease, (atheromatous and calcareous deposits in the smaller arteries of the brain,) and is, I believe, so dependent on it, that the primary cause of the alteration in the structure of the arteries may also be said to be the primary cause of cerebral softening. I look upon the disease as consisting essentially in a perverted or diminished nutrition, somewhat analogous to what occurs in senile gangrene.

"It only remains to speak of the treatment; having established our diagnosis to the best of our power, (for, I believe that a certain diagnosis is occasionally impossible,) all we can do (or, at least, do without increasing the risk of the patient), is to treat symptoms. When the disease commences with symptoms of congestion, purgatives, and the frequent application of leeches to the anus, constitute the safest treatment. A seton or issue in the back of the neck has been found serviceable in a more advanced stage. In the atonic form of the disease, we may do temporary good by mildly nourishing food and tonics.

"The paralysis dependent on softening is never relieved by external applications or by strychnine."

We return our thanks to Dr. Day for his practical treatise on the domestic management, and most important diseases of advanced life. It cannot fail to prove a useful addition to the libraries of the student and practitioner. He has collected on these subjects much valuable matter. Some of the subjects treated of will demand a more extended investigation; and to place at the command of such, as may have the disposition and opportunity to complete what the author has so ably sketched out, the labours of those who have preceded him in the same field, he has appended a tolerably full bibliography.

The object of the appendix is to assist in extending the use of a form of counter-irritation, which he has found of the greatest value in his own practice, and which is comparatively unknown to the great mass of the profession. It consists essentially in the instantaneous application of a flat iron button, gently heated in a spirit lamp, to the skin—an operation completed in a few seconds, productive of little or no pain, immediate in its effects, and altogether incapable of injuring the patient. The cases given in illustration of the effects of this means of counter-irritation, in lumbago and other forms of chronic rheumatism, sciatica and other neuralgic affections, and certain forms of paralysis, will be read with interest. D. F. C.

Art. XXIV.—*Parturition, and the Principles and Practice of Obstetrics.* By W. Tyler Smith, M.D., Lond.; Lecturer on Obstetrics in the Hunterian School of Medicine. 12mo. pp. 395. Lea & Blanchard: 1849.

The medical press has been so prolific, of late years, in works on the principles and practice of obstetrics, that it seems difficult to conceive of the existence of any possible demand for a new publication on the same subject. Numerous, however, and excellent as are the obstetrical treatises that have appeared within a comparatively short period, we are still persuaded that the lectures of Dr. Smith will meet with a favourable reception, and, though they are not adapted to supersede the standard works already in our possession, they will, nevertheless, be found an interesting and valuable addition to the library of the obstetrician.

There is an originality in the manner in which the several subjects embraced in these lectures are treated. In his attempt to elucidate and establish the physiology of the uterus and its appendages, the author has laid the basis for a radical reform in the principles of obstetrics, that will banish much of the empiricism which has heretofore marked its practice, and aid, effectually, in elevating what has been too often regarded as an art to the rank of a science.

The views advanced in these lectures, based upon the doctrine of the reflex action of the womb and its appendages, may not in every instance stand the test of future investigation. Some, we admit, bear the marks rather of hypothesis than of cautious deductions from well-established facts; still, the work of Dr. Smith will, we are persuaded, have a beneficial tendency upon the principles and practice of obstetrics, by prompting renewed inquiry into the true physiology of parturition—correcting the mere mechanical notions that are prevalent in relation to the process, by the discovery of the laws which govern the actions of the uterus as a part of the living organism—the source from whence it derives its power, and by which it is prompted to act under its appropriate stimuli.

The first, or introductory, lecture of Dr. Smith presents a comparison between British and continental obstetric medicine. It contains many just observations, and many to the correctness of which we cannot give our entire assent. There may be, generally speaking, too great a fondness for operative midwifery on the part of the continental accoucheurs, but we are convinced that the rules which govern them in the application of the forceps, even though it may lead to a too frequent application of these instruments, will still be found safer for both mother and child than those adopted by the generality of the British practitioners. The author has included American midwifery in his general censure of that of France. A reference to a correct series of obstetrical statistics would prove how little the censure on the accoucheurs of this country is merited.

The second lecture treats of what the author denominates the three leading ideas which obstetricy, as it exists at the present time, reveals to us, with more or less distinctness, and around which many lesser ideas have ranged themselves in the advance of this department of knowledge.

These primary or leading ideas may be termed Development (of the embryo), Mechanism (of labour), and Motor action (of the uterus). "We may trace the idea of *Development* up to Harvey; that of *Mechanism* to Chamberlen and Roonhuysen; and the last idea—that which I have called *Motor action*—belongs preëminently, in its distinct form, to William Hunter."

The lecture closes with a sketch of the progress of the *nervi-motor* physiology of parturition up to the present time.

In the third lecture, are examined the different forms of motor action observed in human parturition—volition, emotion, reflex action, and peristaltic action, or contraction from the irritability of the uterine muscular fibre.

"The phenomena of labour, and the great majority of the accidents and complications of childbirth and the puerperal period," are according to the lecturer, "nervi-motor; hence, a definite knowledge of motor action in general, and particularly of the uterus and its associated organs, is of the first importance to the scientific accoucheur."

The subject of the fourth lecture is the nervi-motor action of the Fallopian tubes in menstruation, coïtus, conception, and parturition; and the nervi-motor actions of the vagina in the unimpregnated and parturient states; while, in the fifth lecture, are described the nerves of the uterine system, and the growth of the uterine nerves during utero-gestation.

The whole of the subjects included in the first five lectures are treated of with great ability, and the author's exposition of them demands a close and candid examination. A digest of the views presented would scarcely enable our readers fully to appreciate their value, nor would it give anything like a fair exposition of the manner in which the lecturer has presented and illustrated them.

"Parturition," remarks Dr. Smith, "is not one reflex act, but a function, the combined result of many such actions, aided by other powers; and we must study the preliminary phenomena, the different stages of the process, and the final accomplishment of the function; when we shall find that Nature has at her disposal a wonderful succession of stimulus and action, exactly adapted to the dilatation of the os uteri and vagina, the propulsion and expulsion of the fœtus; and providing, also, for the safe contraction of the uterus, and its return to the unimpregnated state.

"The uterus, as a motor organ, stands alone in many respects. Unlike the rectum and bladder, it is not directly influenced by volition; and unlike the heart, it is extremely prone to reflex action; it more nearly resembles the œsophagus, which is uninfluenced by the will, but it is endowed with reflex, motor, and peristaltic action. It, however, differs from the œsophagus in the great number of excitor surfaces with which the spinal system places it in relation; neither is there any other organ—not even the stomach—which acts as a spinal excitor to so great a number of organs as the uterus and its excitor nerves, whether we consider it in the impregnated or in the unimpregnated states. Hence the physiological necessity for the abundance of nerves recently discovered.

"Besides, the reflex action of the spinal marrow, and its system of excitor and motor nerves, there is the direct action of the spinal marrow—though this does not play the important part assigned to it by M. Serres, Brachet, and

Segalas—in which the central organ meets its motor nerves, to the exclusion of the excitors, are involved. The state of the circulation affects all the motor organs under the control of the spinal marrow; and they act with increased energy when the circulation is either plethoric or anæmic, though in the latter, exhaustion of the nervous energy quietly ensues. Thus, there is one puerperal convulsion of hemorrhage, when the heart and blood-vessels have been drained of blood, and another of fullness of the circulation. Want and excess of blood, or materies morbi in the circulation, act as direct stimuli to the spinal centre, and thus the state of the circulation materially affects the uterus during labour. There are also certain agents of the materia medica which, taken into the circulation, affect the spinal marrow. Thus the ergot of rye, passing into the blood, affects the uterus by a direct spinal action; so does strychnia; so does the inhalation of carbonic acid; and so, I believe, does ipecacuanha, the influence of which, in producing uterine contraction, is very remarkable. Savine, aloes, alcohol, and the biborate of soda may probably be added to the same list."

The remarks of the lecturer on the peristaltic or immediate action of the uterus are particularly interesting.

In the sixth lecture, we have a beautiful exposition of the ovular or ovarian theory of menstruation. The analogy between menstruation, œstruation, and the oviposition of birds, insects, amphibia, and fishes, is examined, and the true nature of menstruation pointed out. The lecture closes with some judicious remarks on the diseases of menstruation, sterility, amenorrhœa, dysmenorrhœa, and ovarian convulsion, hysteria, and epilepsy.

We present the views of the lecturer, in regard to the cause—so little heretofore understood—of dysmenorrhœa.

"In dysmenorrhœa, or painful menstruation, the greater portion of the pain consists, I am convinced, of ovarialgia; the deep lumbar pain is decidedly ovarian, and not uterine. Many women suffer so much lumbar pain at each menstrual period, that it resembles, and, indeed, almost amounts to, a monthly attack of ovaritis. Almost all women in the better classes suffer so much pain and disturbance from menstruation, that we may almost venture to say menstruation, like parturition, lies in debatable ground, between physiology and pathology. Part of the pain of dysmenorrhœa, then, is ovarian, and that which is uterine, is often symptomatic of ovarian disorder. In dysmenorrhœa, there is doubtless a pathological state of the uterus induced; but there would be no uterine excitement without the previous excitement of the ovaria. On the other hand, there are patients in whom the uterus is wanting, from congenital deficiency, who suffer all the ovarian pain of dysmenorrhœa. Uterine disturbance must be considered as a secondary condition—an aggravated symptom of ovarian excitement in painful menstruation. Of one part of the uterine pain of dysmenorrhœa, I have a word to say—I mean that which women call the bearing down pain, and of which they complain so much, from the pubes downward to the knees. This bearing down I believe to be a tenesmus of the os and cervix uteri; it is most frequent and severe in women who have borne children, and in whom the os and cervix have been developed. I have before directed attention to the points of similarity between the healthy actions of the various sphincteric muscles—you will find the pathological analogies equally interesting. The tenesmus uteri is analogous to the tenesmus of the bowel, or the tenesmus of the bladder. These spasmodic affections of the outlets of the sexual, urinary, and intestinal canals, are comparable with many other spasmodic symptoms. Thus the globus hystericus, or pharyngismus, is a contraction of the pharynx, and the laryngismus affecting the larynx, and the form of cardialgia dependent on contraction of the cardia, are analogous affections of the respiratory and digestive tubes. Of course, where there is disease of the os and cervix, the tenesmus uteri will be more distressing than usual, and will often require the chief part of our treatment; yet the ovarian excitement in the background must not be forgotten. I am decidedly opposed to the view that dysmenorrhœa is *caused*, in the majority of cases, by chronic inflammation of the os and cervix uteri. The relation between dysmenorrhœa and inflammation of the os uteri is generally one of coincidence, not of causation; nay, it is often a symptom induced by ovarian irritation, a symptom requiring palliation, but the relief of which by no means constitutes the whole of our treatment. Let any one who believes in the merely uterine theory of dysmenorrhœa closely examine the nature and seat of the pain; he will speedily be obliged to recognize the paramount influence of the ovaria. Of course, wherever there is inflammatory action of the os and cervix, the inflammation will be rekindled at every menstrual period, and constitute a variety of painful menstruation; what I am contending against is, the too exclusive attention of the practitioner to this superficial form of dysmenorrhœa."

The seventh lecture treats of the principal motor phenomena of pregnancy. In connection with this subject, the lecturer offers what he believes to be an elucidation of the real nature of the movements generally considered to belong to the fœtus.

These movements he does not believe to belong to the fœtus, but to be true peristaltic movements of the uterus. The reasons he offers for rejecting the generally received opinion in regard to their cause, must certainly be considered as conclusive. The very idea of the fœtus in utero producing them by any sudden change in its position, or by a sudden extension of its limbs, has long seemed to us so perfectly absurd, that we feel surprised to find any intelligent accoucheur of the present day continuing to sanction it; and when we come to examine into the circumstances under which the movements in question often occur, every one must be convinced of the impossibility of their being produced by muscular movements on the part of the fœtus; the explanation of the lecturer is highly plausible, and we are inclined to the opinion that it will be found, upon examination, to be the correct one.

The subject of the next lecture is an inquiry into the cause of labour. After stating very fully the difficulties by which this inquiry is attended, the author proceeds to show, by a series of arguments, drawn from comparative physiology, that ovarian excitement is the law of parturition in all its forms of ovi-expulsion.

"There is," according to the lecturer, "a strict analogy between all the acts of the female generative organs—namely, coïtus, œstruation, menstruation, conception, and parturition. Coïtus and the sexual orgasm are merely incitements to the fruitful performance of the other acts of generation. The rest—œstruation, oviposition, menstruation, conception, and parturition—are only so many varieties of fertile or unfertile ovi-expulsion, and are convertible one into the other."

"Parturition," the lecturer insists, "does not merely occur at what would otherwise be a menstrual period, but is *essentially a menstrual period.*

"In menstruation, a small synergic and reflex arc is described between the ovaria and the Fallopian tubes; in parturition, a larger arc is in operation, extending from the ovaria to the uterus. At the time of ordinary menstruation, the ovarian irritation, which excites the contraction and rigidity of the Fallopian tubes, is manifest. Throughout utero-gestation, the ovarian excitement returns in a slight degree at each periodic date; but at the eleventh period after conception (reckoning the last catamenial period inclusively), the ovarian excitement returns in full force, and, as a consequence, the uterine excitability, and the uterine actions of labour begin."

In this lecture, Dr. Smith presents his objections to anæsthesia, as a means of suspending the pains of labour. He contends for the morality of pain, and insists upon the impropriety of etherization, independently of the risk attending it, in consequence of the sexual orgasm under its use being substituted for the natural throes of parturition.

The ninth lecture treats of abortion as a branch of spinal pathology; we cannot enter upon a notice of the important ideas advanced by our author in relation to this subject. The causation of abortion, admitting the doctrine of the reflex character of the uterine actions to be correct, is cleared of many of the difficulties with which it is surrounded, by the views that are generally entertained in relation to it.

The ensuing lecture on the prevention and treatment of abortion is replete with sound practical hints.

The eleventh lecture describes the physiological stages of labour. The reader will be repaid for an attentive perusal of this lecture, by the novel and interesting views presented by the author, who has endeavoured to elevate the entire process of labour from a series of mere mechanical efforts, in which light it is even now too commonly viewed, to the rank of a succession of vital actions, having for their object the safe expulsion of the mature fœtus. This sketch of the physiology of the pain of labour is highly interesting.

The next lecture is devoted to a consideration of the subject of periodicity, in reference to the functions of the female reproductive organs. The views advanced by our author in reference to it are original, and though purely hypothetical, have great plausibility. They must be carefully studied in order to be understood and appreciated. A general idea of the leading doctrine of the lecturer may be acquired from the following general summary:

"The different organs of the reproductive system affect each other in a special and peculiar manner, in the causation of their periodic phenomena. The ovaria are the organs in which, during the continuance of the catamenia, the periodicities are most distinctly manifested, though these organs doubtless derive their periodic energies through the medium of the nervous system. We also know that the ovarian periodicity is specially modified by the condition of the breasts and the uterus. There is a remarkable synergic balance preserved between the three great organs of the sexual system—namely, the uterus, mammæ, and ovaria. In the virgin state, the condition of the ovaria, at each ovarian periodic excitement, excites the uterus to secrete the catamenial flow. When impregnation has occurred, the changes set up in the uterus during the development of this organ and its contents, react on the ovaria, and interfere with the ovarian periodicities, so that they become masked during the whole term of pregnancy. At the time of parturition, the ovaria and uterus are the seat of a special excitement, and it is this excitement of the uterus and ovaria which excites the mammæ to the secretion of milk for the supply of the new-born infant. After delivery, the uterus soon returns to a state of comparative repose; but during lactation, the actions going on in the mammæ, like those of the pregnant uterus in ordinary cases, prevent the full development of the ovarian periods. As soon, however, as lactation and the mammary development have ceased, the uterus, breasts, and ovaria, all resume their ordinary periodicity and evolution, and the catamenial flow proceeds regularly until a fresh impregnation occurs. Thus, the catamenial cycle of twenty-eight days is departed from at conception for another cycle—namely, that of gestation, which consists of two hundred and eighty days, or ten lesser cycles. After the completion of gestation, a new cycle is commenced—that of lactation—upon the completion of which the system returns to the simple catamenial cycle. These cyclical and epi-cyclical periods are themselves all included in another great period of development, extending from puberty to the decline of the catamenia."

The subjects of the thirteenth lecture are, the first extra-uterine phenomena of respiration, and the attendant changes in the fœtal circulation. Referring the first physiological act of respiration to the impression of the external air upon the excitor nerves of the surface of the body, and especially upon the trifacial, and pointing out the distinction between the regular reflex motor acts of respiration, and those which are of centric spinal origin, and are excited by certain changes induced in the medulla oblongata itself, by various causes, such as excessive abstraction of blood, or the circulation of venous blood only, in the spinal centre, the lecturer proceeds to a consideration of the causes of asphyxia neonatorum, and its treatment before and after birth.

The views of the author are plausible, and his directions for the prevention and removal of asphyxia in the new-born child correct.

In the fourteenth lecture are pointed out the applications of physiology to obstetric pathology and therapeutics. Among the accidents and derangements of labour dependent upon excessive motor power, the lecturer arranges abortion, precipitate labour, rigidity of the os uteri, rupture of the uterus, laceration of the perineum, &c.; excessive after-pains, encysted placenta, inversion of the uterus, hourglass contraction, metastatic pains, and puerperal convulsions; and among those dependent upon a defect of motor power, he classes uterine inertia, tardy labour, sinking, uterine hemorrhage, placenta prævia, retained placenta, and labour with paralysis. The relation of nervi-motor action to instrumental delivery, and manual operations, is pointed out, and the lecture closes with a new classification of obstetric therapeutics, &c.

The ensuing lecture presents a view of the causes of excessive uterine action, and the means by which we can moderate or remove those unruly efforts of the uterus, and its associated organs, which become so dangerous in their results. The causes of excessive uterine action are, according to the lecturer, ovarian irritation, emotional disturbance, early rupture of the membranes, voluntary efforts, improper position of the patient, premature ossification of the fœtal head, deformity of the pelvis, and particular presentations of the child, state of the circulation, and excessive digitation on the part of the accoucheur. The remedies for excessive action, enumerated by the lecturer, are the avoidance of physical and mental excitement, rest, laxatives, warm or opiate enemata, bleeding, nauseants, opium, abdominal bandage, &c. The remarks of the lecturer on the causes and prevention of excessive uterine action are replete with good sense, and will be read with profit by the young obstetrician especially.

The sixteenth lecture is on the cause and prevention of rupture of the uterus, and laceration of the perineum; it is a highly interesting one.

The seventeenth lecture treats of the causes and treatment of rigidity of the uteri, encysted placenta, inversion of the uterus, and after-pains. The views of the author upon these subjects will be found to be truthful, and his practical directions judicious. We present his account of the cause of inversion:—

"From the best consideration I have been able to give the facts of inversion, I am persuaded that it depends in *all* cases mainly upon an *active* condition of the uterus. Where it takes place without any mechanical interference, there can be no doubt of the preternatural and perverted activity of the uterus. But I am convinced, that even in cases where the placenta is attached to the centre of the fundus, and when the cord is drawn through the vagina with any amount of force likely to be exerted by the accoucheur, it is not mere mechanical displacement which produces the accident; but the irritation of the fundus uteri, by traction, excites contraction of the fundus, thus producing that contraction and descent of the fundus uteri, which is the first step of the accident. The common opinion has very naturally arisen, from observing, in some cases, that the fundus uteri, when the placenta is firmly attached, follows the advancing cord, while traction is being used. According to my view, the depression of the fundus uteri, even in these cases, is not a simple yielding of the part, according to mechanical principles, but an active contraction, excited by the irritation of the fundus uteri by the traction of the placenta.

"To pursue the steps by which complete inversion is produced. There is first, cup-like depression of the fundus uteri; coincident with, or immediately following upon this depression, there is hourglass contraction of the body or lower portion of the uterus. The annular contraction of the body of the uterus grasps the introcedent fundus as it would a foreign body, and carries it downward, for expulsion through the os uteri, the os uteri being at this time either in a state of inertia, or actively dilated, just as at the end of the second stage of labour. After the inverted uterus has passed through the dilated os uteri, this part of the organ becomes contracted, preventing reversion from taking place. Thus, there is, first, depression of the fundus uteri, with annular, or hourglass contraction of the body of the uterus, and dilatation of the os uteri. Next, there is intussusception of the fundus by the body of the uterus. Lastly, complete inversion occurs, with contraction of the os uteri upon the inverted organ. The displacement may not be complete; it may, in some cases, stop at introcession; in others, at intussusception, and then return to the natural state; or it may remain intussuscepted."

A very interesting lecture follows on certain extra-uterine reflex actions of an abnormal character, occurring before, during, and after parturition, as false-labour pains; metastatic pains; affections of the stomach, abdominal muscles, bladder, intestines, heart, larynx, &c. Rigors, diuresis, partial convulsive action, tympanitis, reflex counter-irritation, sensation of draught in the breasts. The lecture closes with some remarks on the motor actions of the mammæ. We recommend an attentive perusal of this lecture; the remarks of the author will be found to point to important practical results.

The nineteenth lecture treats of the natural and morbid conditions of the reflex functions in the infant at the time of birth. The lecturer merely notices the morbus cœrulæus, which, he admits, can hardly be considered as a motor derangement. He refers it entirely to the persistence of the open state of the foramen ovale—a supposition which may be considered as being now entirely repudiated by a chain of most conclusive facts. Tetanus neonatorum is explained by a reference to the reflex function of the spinal marrow: the spinal centre being excited by irritation of the umbilicus, or of the intestinal canal; by the influence of temperature, particularly alternations of temperature; by deficient ventilation, and want of cleanliness. The theory of Dr. Sims, that the disease is produced by pressure of the occipital bone upon the medulla oblongata, during and subsequent to parturition, in consequence of imperfect ossification and articulation of the cranium, is rejected. "Displacements and injuries of the cranial bones," the author remarks, "if they really do occur, must be as common in this country (England) as in America; whereas, tetanus is extremely rare among us." But if, as Dr. Sims asserts, he has caused the convulsions immediately to cease by replacing the dislocated occipital bone, the objection of the lecturer falls to the ground.

The all-important subject of puerperal convulsions is considered in the next four lectures. It would lead to a much greater extension of this notice than it was our intention to give to it, were we to enter upon an exposition of the author's views in relation to the pathology of this disease. He refers it entirely to irritation of the excito-motor portion of the spinal marrow, and considers the congestion and effusion in the brain as a consequence rather than as the cause of the convulsions. The opinions expressed in these lectures are replete with interest, and demand a serious consideration, being, as they certainly are, "capable of important practical application in the treatment and prevention of the disease." The author's remarks on the therapeutics of puerperal convulsions should be carefully studied; we believe that the principles laid down by him will explain some of the discrepancies in the experience of different practitioners as to the results of particular plans of treatment in this affection.

The twenty-fourth lecture is on the causes and treatment of uterine inertia, while in the next two lectures, which complete the series, the management of uterine hemorrhage is considered at some length.

The treatment laid down by the author does not differ essentially from that which would be pursued by every well instructed accoucheur. The merit claimed by him is not for the originating of any new plan for the management of uterine hemorrhage, but for the proper application, according to correct physiologico-therapeutical principles, of the remedies in common use, so as effectually to derive from them, in each case, the desired result—the arrest of the flow of blood.

The lecturer concludes his exposition of the treatment of uterine hemorrhage with the following remarks:

"The methods of obstetrication have been ample enough; but the directions for their selection and combination have been very deficient. You have seen how susceptible all the remedies in this grave and important casualty are of physiological arrangement; how, indeed, the mere touch of physiology has been sufficient to marshal them in something like due order and proportion. It would, I am sure, be impossible to find any subject within the entire range of medicine of equal importance, of which this might be said with more perfect truth.

"Thus you see how profoundly physiology impresses itself upon our therapeutics in the treatment of uterine hemorrhage. It will not do for those who are too idle to study the matter, to say: we will be practical—we will leave the physiology of the question to be decided by others. Physiology protests against being thus postponed; it will not be put off; for it is inseparable from practice. Without a physiological comprehension of the points of treatment, what is likely to happen? In the arrest of hemorrhage, many remedies will probably be tried, either in succession, or in confused combination; but instead of a judicious combination of the several modes by which uterine contraction may be produced, mechanical means, or reflex or direct actions, will be trusted to alone, in such wise, that, though many remedies appear to be used, only one or two principles, and those, perhaps, not the most important, will be invoked. It is just like the old Mithridatic formulary! Thus, suppose cold applied to the rectum, cold to the abdomen, iced water given the patient to drink, and the child placed at the breast, there is great appearance of activity, but in reality only the reflex action of the uterus has been excited, which would have been equally powerful if only one efficient mode of excitation had been tried. Or again, after one mode of reflex action had been tried in vain, the reflex function being exhausted, it would be only waste of time to endeavour to excite reflex action by applying irritation to other incident nerves; yet this is often done. We do not use *all* the resources which physiology places at our command, unless we call forth, in a dangerous hemorrhage, the reflex spinal action, the direct spinal action, the irritability of the muscular fibre, and apply the mechanical methods of arresting the flow of blood from the uterus. If, for instance, instead of the jumble of reflex actions, we apply alternate heat and cold to the abdominal surface, give a dose of ergot, irritate the uterus through the abdominal parietes, and grasp it with the hands, we apply all the modes of inducing uterine contraction, and we thus get far more than a fourfold increase of contractile power."

In the foregoing notice of Dr. Smith's Lectures, we have attempted nothing more than a brief sketch of their leading contents, and of the general doctrines upon which the lecturer bases his exposition of the cause and process of parturition, and the leading principles and practice of obstetrics. The lectures are confined, strictly speaking, to the physiology, pathology, and therapeutics of the parturient and puerperal states. The anatomical, manual, and instrumental branches of obstetrics are passed over by the author without notice. Limited, however, as is the scope of the work before us, it is particularly rich in original views, judicious suggestions, and sound practical directions. We cannot, it is true, acknowledge the verity of all that the lectures contain in reference to the several subjects of which they treat, nor do we recognize the entire accuracy of all the deductions that are drawn from well established premises. The general principles, however, that are advocated by the author, and his application of these in explanation of the physiology of parturition and obstetrical pathology and therapeutics, are worthy of a close and careful study; Dr. Smith has certainly done more than any writer who has preceded him, in elevating obstetrics to the rank of a science. D. F. C.

Art. XXV.—*Reports, for* 1848, *of Institutions for the Insane in the United States:*
1st. *Of the McLean Asylum for the Insane, Somerville, Massachusetts.*
2d. *The State Lunatic Hospital, Worcester, Massachusetts.*
3d. *The Boston Lunatic Hospital, South Boston, Massachusetts.*
4th. *The Butler Hospital for the Insane, Providence, Rhode Island.*
5th. *The State Lunatic Asylum, Utica, New York.*
6th. *The State Lunatic Asylum, Trenton, New Jersey.*
7th. *The Pennsylvania Hospital for the Insane, near Philadelphia, Pa.*
8th. *The Western Asylum, Staunton, Virginia.*
9th. *The Hospital for the Insane, Indianapolis, Indiana.*

1st. From the report of Dr. Bell, we obtain the following *résumé* of the medical history of the McLean Asylum during the past year:—

	Males.	Females.	Total.
Patients in the asylum, beginning of the year	93	80	173
" admitted during the year	71	72	143
Whole number	164	152	316
Discharged	87	48	155
Remaining at the end of the year	77	84	161

	Males.	Females.	Total.
Of those discharged, there recovered -	55	37	92[*]
" " much improved -	4	10	14
" " improved - -	4	3	7
" " unimproved - -	16	9	25
" " died - - -	15	8	23

Causes of death.—MALES—Old age 3, phthisis 2, *paralysie générale* 3, epilepsy 6, general exhaustion 3. FEMALES—Old age 2, general decay 3, phthisis 1, erysipelas 1, acute cerebral disease 1.

From 1837 to 1848, both inclusive, the number of patients admitted was 1696; discharged 1607; cured 884; died 184.

"The only *personal restraint* (as the phrase is somewhat technically used), which has been employed during the year, has been the application, in two or three cases, of the most ingenious contrivance of the first physician of this asylum, Dr. Wyman—known as the *bed-strap*—in which an arrangement of webbing and buckles maintains the patient recumbent in bed, yet with liberty to change from side to side.

"In certain extreme cases of puerperal and other exhaustive forms of mania, or where delusion compels a perpetual standing on the feet until utter exhaustion is endangered, the value—I might say the essential necessity—of this means, has been so often and strikingly verified, that I can hardly believe that any conscientious physician, however much wedded to the general theory of *non-restraint*, could decline its use, if he were acquainted with its efficiency and its gentleness. Such examples of disease, like all the rarer kinds of insane peculiarities, occur in institutions quite capriciously, by intervals of freedom being followed by repeated cases.

"All other forms of mechanical restraint have been abandoned with us for a number of years, and with no reason thus far to regret their disuse. The expense of doing justice to a household of insane patients, without the use of any confining measures, is certainly much augmented, unless the poor equivocation is resorted to, of getting rid of muscular restraints by the substitution of strong rooms. It would be absurd and hazardous for an institution, in which economical considerations had to be strictly regarded, to aim at this ultimate refinement in the care of the insane; that is, a real, and not merely a delusive, avoidance of personal restraints."

The wing for the male patients at this asylum has been greatly improved, in its internal construction, during the year, and a system of hot water heating and exhaustive ventilation has been introduced. An account of these improvements occupies the remainder of the report.

No man in the country has more thoroughly studied the subjects of heating and ventilation than Dr. Bell, and his recent address, before the Massachusetts Medical Society, upon "The Practical Methods of Ventilating Buildings," embodying the results of his researches and reflections, is a very valuable contribution to hygiene.

2d. From the report of Dr. Chandler, of the Hospital at Worcester, we glean the subjoined statistics:

	Males.	Females.	Total.
Patients in hospital at beginning of year	207	187	394
Admitted in the course of the year - -	128	133	261
Whole number - - - -	335	320	655
Discharged - - - - -	118	128	246
Remaining at the end of the year - -	217	192	409
Of those discharged, there were recovered -	67	69	136
" " " died - -	15	15	30

---

[*] The report says "*eighty two*," but gives the number in each sex as follows, "fifty-five males, and thirty-seven females." In these details there are 161 discharged patients accounted for: whereas, it had just been stated that the number discharged was 155.

Causes of death.—Marasmus 7, apoplexy and palsy 5, epilepsy 2, consumption 3, disease of heart 1, disease of brain 1, typhus fever 1, lung fever 1, "dysenteric" fever 1, chronic dysentery 1, erysipelas 1, diarrhœa 3, exhaustion 3.

	Males.	Females.	Total.
Patients admitted, from opening of hospital, 1833 - - - - -	1555	1529	3084
Discharged - - - - - -	1338	1337	2675
Of whom were cured - - -	688	743	1431
" died - - - -	151	121	272

The hospital has been more crowded with patients during the past year than at any previous time; the number having been so great as to make it necessary for many to sleep upon beds placed, at night, upon the floors of the galleries. Dr. Chandler recommends the erection of another institution for the insane in Massachusetts, and, in the event that this should be effected, suggests the propriety of placing the male and the female patients of the State in separate asylums.

"There are some advantages," says he, "which suggest themselves, in having the insane in an institution all of one sex, and few or no disadvantages.

"Males can be supported in a hospital somewhat cheaper than females can. Their labour is more profitable, and they are satisfied with less attention of nurses. In this hospital, about fourteen dollars per annum is expended for attendants' care of each male patient, and about twenty-one dollars for each female. Females, too, require a larger carriage establishment. Probably, the expense of provision and clothing is somewhat larger for males than females."

The following quotations are made from the comments upon the tabular statistics.

"Cases of palsy are almost sure to terminate fatally within three years. It is a disease almost peculiar to the male sex. It is very seldom that general paralysis is met with among females. The active man of business who has contracted habits of intemperance, is very liable to become paralytic.

"Closely allied to palsy is a disease of the nervous system, resulting in convulsions of an epileptic character. The insane, who have epileptic fits or convulsions, seldom or never recover. They continue along many years, perhaps, but almost always becoming gradually more diseased, and more demented.

"From these two classes of patients, much of our fatality proceeds.

"Consumption and disease of the functions of nutrition, or marasmus, are very common in the last stages of fatal cases of insanity.

"One boy, less than eight years old, was brought to us the past year. He was taken insane, soon after having a fever, before he was three years old. His mind has not expanded much. His case is a hopeless one. We thought his habits were improved by a few months residence under our care. But he will be a troublesome person to manage, for those who may have the care of him.

"The insane appreciate their religious advantages here. They can discriminate between what is wrong and what is right, unless it is upon the subject of their delusions. They as heartily repent of their transgressions, when made sensible of them, as any rational person. Many have a deep religious feeling, and a strict sense of justice. It is only when their delusions and ungovernable propensities intervene, that their thoughts and actions vary from that of others."

3d. At the Boston Lunatic Hospital, the number of patients was as follows:

	Males.	Females.	Total.
November 1st, 1847 - - - -	78	78	156
Admitted during the year - - -	37	69	86
Whole number - - - -	115	127	242
Discharged - - - - -	30	26	56
Remaining, November 1st, 1848 - -	85	103	188
Of those discharged, there were cured -	17	13	30
" " " died - -	7	8	15

Causes of death.—Dysentery 4, general palsy 3, marasmus 2, disease of heart

1, suicide 1, exhaustion 1, consumption 1, chronic diarrhœa 1, pleuro-pneumonia 1.

In his comments upon the causes of the mental aberration of the patients received during the year, Dr. Stedman relates the following case:—

"A phenomenon of rather singular character seems to have been the origin, at least the proximate cause of insanity in one of the patients. Her sister states that, about two years ago, when thirty-nine years of age, there suddenly sprang out upon her chin and upper lip a thick growth of beard; that her spirits were much affected by the circumstance; that she became more and more unhappy and mortified by her strange appearance; till at length she could not be persuaded to pursue her customary occupations. She was brought here laboring under the deepest depression and melancholy, from which she still suffers. Her beard continues to grow, and she is shaved with the regularity of our male patients. I have not been able to learn whether, at the time of this sprouting of the hair, the bodily health of this patient was peculiarly affected in any way."

It is known that some physicians deprecate yards, courts, or enclosures for the patients of institutions for the insane; and recommend, as substitutes, verandahs attached to the buildings. Upon this subject Dr. Stedman makes some sensible remarks, which we copy:—

"We know the effect produced on the vegetable creation by the deprivation of light. The history of man is not without numerous illustrations of analogous evils inflicted on the human frame by a residence in dark and gloomy apartments. The benefits accruing to the insane by a change of air, and the enjoyment of the full sunlight, such as would be afforded them by leaving the halls of the house for spacious airing grounds, would be observed in their more healthful personal appearance, a more contented and cheerful disposition, a less irritated and irritating demeanor, as well as in many other ways. In short, no system of lighting, ventilating, or warming a building can be made to supersede the necessity of granting to the insane the liberal use and enjoyment of the external air at all proper opportunities."

4th. The Butler Hospital for the Insane, so named in commemoration of Mr. Cyrus Butler, who contributed forty thousand dollars to the fund raised for its establishment, is beautifully situated upon the westerly shore of the Pawtucket or Blackstone river, two miles, north-easterly, from the city of Providence. It was opened for the reception of patients on the 1st of December, 1847, under the superintendence of Dr. Isaac Ray, formerly superintendent of the Maine Insane Hospital, and distinguished for his admirable writings upon the medical jurisprudence of insanity.

His first Report is before us. It embraces a period of thirteen months, ending December 31st, 1848.

	Males.	Females.	Total.
Patients admitted - - - - -	84	72	156
Discharged - - - - -	28	28	56
Remaining - - - - -	56	44	100
Of those discharged, there were cured -			17
" " " died - -			13

Causes of death.—Consumption 5, apoplexy 1, general paralysis 1, delirium tremens 1, acute mania 3, chronic mania 1, cancer and old age 1.

"Of the twenty-six cases discharged uncured, fifteen had been with us but three months, or less; and of these, seven were regarded as curable, and would probably have recovered under a fair trial of treatment; while their future condition, it is very likely, will be but a continued change from bad to worse.

It would be impossible, of course, to penetrate into all the various motives that lead to such removals; but a notice of the principal ones will sufficiently illustrate how lightly people assume the responsibility of tampering with, and experimenting upon so serious a thing as the mental derangement of a fellow-being. I refer to a childish impatience that cannot wait a reasonable time for the event of recovery, and never rest until some new method of treatment is adopted. They do not seem to be aware, nor are they willing to learn, that insanity is of much longer duration than most acute diseases, and that in many, if not most of the cases that finally recover, weeks and months pass away without any sensible improvement. This is a fact of so much importance that I run the hazard of saying what many may already know, by referring more particularly to the organic law with which it is connected. Fever, pneumonia, small-pox, measles, for instance, have a tolerably uniform duration, and we may predict, within a few days, the period when the result of the case will be apparent. Of some other diseases to which the body is liable, such as scrofula, dyspepsia, necrosis, catarrh, we may confidently say that recovery, if it happens at all, is a very distant event. Such is the law of nature; and the resources of art, however they may mitigate suffering, or change some of the accidents of the disease, cannot prevail against it. The duration of insanity, too, though far more various than in the above instances, is governed by a law scarcely less inflexible. Though as curable as most severe diseases, yet the period within which recovery may occur, is much broader than that belonging to any other. According to observations, made by Esquirol, during a certain series of years at the *Salpétriére*, where the stay of the patient is determined by the will of the physician, —not the caprice of friends,—less than one-half of the recoveries were effected within the first year, and more than one-tenth subsequent to the second year. The average duration of the disease he estimates at one year. Very different is the popular opinion; and every day we are obliged to witness the disappointment of hopes that have been entirely unwarranted by the laws of disease. As month after month passes away with but little improvement, the minds of friends are filled with perplexity and wonder at the obstinacy of the disease; their confidence, in the propriety of the course they have taken, gradually ebbs away; and new experiments are tried, for the purpose of hastening an event which nature chooses to delay. Accordingly, the patient is removed to his own home, or is placed with friends in the country, or goes upon a journey, or is subjected to some of the empiricisms of the day. No longer feeling the gentle restraints of the asylum, surrounded by those who are ever ready to gratify his wishes, and moving in a circle of influences that tend to renew the excitement and restlessness that had begun to subside under the tranquilizing effects of rest and seclusion, he rapidly loses whatever he may have gained. He is then returned to the hospital, to regain, by a tedious process, the ground he has lost; or is kept at home, to be subjected to additional experiments, and to sink, at last, into a state of incurable disease. I have known many experiments of this kind—that of attempting to find some shorter road to recovery—but my observations have furnished me with scarcely a single instance of success."

The subjoined extract is encouraging to the advocates of non-restraint in the management of the insane.

"Believing that in this institution no merely economical considerations should prevent us from adopting any improvement intimately connected with the highest interests of the insane, we have, from the outset, been governed by the rule, that mechanical restraint should be considered as an extreme measure, to be used only when the object in view was clearly beyond the reach of any other means. Biassed by no theory, and controlled by no will but our own, we have endeavoured to observe this rule faithfully and honestly; and the result is that, during the thirteen months we have been in operation, having one hundred and fifty-six patients under our charge, we have used mechanical restraint in one instance only. This was to prevent a person from tearing open a wound, and was continued for three or four days. It is a fair question to ask, whether this result has not been obtained by the sacrifice of considerations more or less important; for, after all, this must determine its practical value. My reply is, that I have no reason to believe that, in a single instance, has the comfort of the patient been compromised, nor that seclusion has been carried further than it otherwise would. The destruction of clothing might have been considerably lessened, no doubt, by the more liberal use of restraint, but it is impossible to say, with any degree of certainty, to what extent."

The paramount utility of asylums over jails, and similar places of confinement, as receptacles for patients suffering under mental alienation, is illustrated by the case subjoined.

"We received one of this class of persons, who had been confined for eleven years. During all this time, constituting so large a share of the period allotted to man, he never left his cell except to pass into an adjacent one; he had never placed his foot upon the ground, nor breathed the air of heaven except through grated windows. One may faintly conceive, but language cannot describe, the luxury of the sensations which thrilled through every nerve and muscle in his body, as he paced our galleries, and once more walked abroad, with nothing between him and the open sky above and the solid earth beneath. After staying with us about nine months he was discharged; and from that day till this, he has been earning an honest livelihood by working on a railroad. Had this person committed any crime of unparalleled atrocity, that he should have been subjected to a punishment which for duration and severity is unequalled by a single penalty in the statute-book? Far from it; he had committed no criminal act whatever; he was only insane."

5th. By the report of Dr. Brigham, of the New York State Asylum, it appears that the number of patients at that institution were:—

	Males.	Females.	Total.
December 1st, 1847, - - - -	231	241	472
Admitted during the year - - -	201	204	405
Whole number - - - -	432	445	877
Discharged - - - - -	189	193	382
Remaining, November 30th, 1848, - -	241	254	495
Of those discharged, there were cured -	87	87	174
Died - - - - - -	46	40	86

Causes of death.—Dysentery 35, diarrhœa 10, marasmus 12, meningitis 10, epilepsy 5, general paralysis 5, consumption 3, suicide 2, old age 1, apoplexy 1, gangrene of leg 1, hydrothorax 1.

The unusual number of deaths is sufficiently explained by the following account of a severe form of dysentery which prevailed at the asylum in the months of August and September.

"During these two months a large number of the patients, and a considerable number of the attendants and assistants, were affected by dysentery or diarrhœa. 195 patients—viz. 80 men and 115 women—were attacked by dysentery, and 27 men and 18 women by diarrhœa, making a total number of 240 cases. Of this number 39 died, viz. 35 of dysentery and 4 of diarrhœa.

"The above, however, does not include 21 cases of dysentery and 9 of diarrhœa that occurred among the attendants and assistants, none of which proved fatal. The disease prevailed about the same time in all parts of the building, and alike affected those that had previously been out of doors most of the time, and those that had not been out at all. It also prevailed in most of the towns in this region, and proved fatal to many, especially to those whose systems were impaired by previous disease. At this asylum, with the exception of two cases, all that died were patients who had either been long insane, or whose bodily health was previously very poor, and of whose restoration to reason we indulged no hope."

From the mass of matter in this valuable report, we select such extracts, and collect such facts, as are most interesting or important.

	Males.	Females.	Total.
Patients admitted from Jan. 16th, 1843, to Dec. 1st, 1848, - - - -	1017	997	2014
Discharged - - - - - -	776	743	1519
Cured - - - - - -			814
Died - - - - - -			200

Of the 2014 patients, 108 men and 143 women, a total of 251, were disposed to suicide.

"It is often said that a person will not commit suicide if placed in a room with others. This is, we presume, generally correct, but not always, as some have not only attempted suicide, but actually accomplished it under such circumstances; though, so far as we have personal knowledge, they have committed the act while the others were sleeping, or else secreted themselves from observation behind curtains, or other objects. Thus, we have known it effected by hanging, and without noise, while others were in the same room. Hence the necessity of unceasing vigilance in cases where the disposition to suicide is known or suspected."

The number of suicides during the past four years in the State of New York, so far as could be learned, was, in 1845, 74; 1846, 64; 1847, 106; 1848, 88.

Of the 2014 patients received at the asylum, 637 were known to have insane *relatives.*

Known to have insane *parents*, men 121, women 152: total 273.

"Of the 121 men, the number having insane	fathers,	was	64
" " " "	mothers,	"	53
"Of the 152 women, the number having insane	fathers,	"	67
" " " "	mothers,	"	80

"And four men and five women inherited a predisposition to insanity from both parents.

"Thus it would appear from our inquiries, and they have been very carefully conducted, that insanity is a little more likely to be transmitted by the mother than by the father, and that mothers are considerably more likely to transmit it to daughters, than to sons; while the fathers most frequently transmit it to sons.

"Liberty, so favourable to the development of the human intellect, multiplies the causes of its derangement. Hence, in countries where there is most intelligence and freedom, there will be found the greatest mental activity, and the most cases of insanity. We are of the opinion, and it is an opinion formed after much inquiry, that there is more insanity in this country, especially in the northern and eastern States, than in any other; and that it is fearfully on the increase.

"In our opinion, the most frequent and immediate cause of insanity, and one of the most important to guard against, is the *want of sleep.* So rarely do we see a recent case of insanity, that is not preceded by a want of sleep, that we regard it as almost the sure precursor of mental derangement.

"Notwithstanding strong hereditary predisposition, ill health, loss of kindred or property, insanity rarely results unless the exciting causes are such as to occasion loss of sleep. A mother loses her only child, the merchant his fortune; the politician, the scholar, the enthusiast, may have their minds powerfully excited and disturbed; yet if they sleep well they will not become insane.

"We shall be pardoned for respectfully mentioning our apprehension that the study of insanity is too much neglected by physicians engaged in general practice. We have no hesitation in saying that if the physicians of the country were fully aware of the importance of this subject, and would as thoroughly study insanity as they do other diseases, and exert themselves to prevent, by timely advice, and to arrest it in its early stage, they would do those predisposed to insanity, and the insane themselves, an amount of good unequalled by that of the asylums of the country."

In a general description of the medical treatment pursued at the asylum, we find the following remarks.

"Many of the patients sent to this institution have been injured by too much bleeding and depletion before they were committed to our care. Some we think have been rendered incurable by this treatment, and we cannot forbear remarking, that, in our opinion, the work of Dr. Rush, on the 'Diseases of the Mind,' in which directions are given to bleed copiously in maniacal excitement, has done much harm, and, we fear, it is still exercising a bad influence; and we hope no future edition will be issued without notes appended, to correct the errors into which the distinguished author has fallen, for want of the numerous facts which have been furnished since his time, and which enable us to see the errors of our predecessors."

Dr. Brigham has used stramonium, as recommended by Dr. Moreau, of Tours, in cases of hallucinations of vision and audition, but has observed no material or permanent benefit from it. He has "employed electro-magnetism in many cases, without any other good effect than that occasioned by the amusement or interest created by the use of it." He has administered the *hashish* to a considerable number, but, "on none had it any lasting effect either good or bad." He has used ether, by inhalation of the vapour, "to a large number, both men and women, who were affected with various forms of mental delusion," and, he remarks, "to none has it proved injurious, and we are rather favourably impressed with its use,though we do not expect any striking remedial effects from it."

The effects of chloroform were found very similar to those of ether. Neither of them was administered in cases of recent insanity, nor, in those having the form of mania with high excitement.

"Cod-liver oil we have used in many cases, and think with benefit in some instances. We apprehend it will be found a useful remedy in certain cases of insanity, accompanied by emaciation and costiveness, and when there is a tendency to consumption or rheumatism."

6th. The New Jersey State Lunatic Asylum is about two miles north-west of the city of Trenton. Its situation combines many advantages of convenience, utility, and beauty. In its internal construction, it is said to display all the improvements suggested by experience in both Europe and America.

It was opened for the admission of patients, on the 15th of May, 1848, under the superintendence of Dr. H. A. Buttolph, who, for three years, was associated with Dr. Brigham in the asylum at Utica.

The first annual report embraces a period of but seven and a half months, ending Dec. 31st, 1848.

	Males.	Females.	Total.
During that period the patients received were	47	39	86
Discharged cured - - - -	1	2	3
Remaining at the end of the year - -	46	37	83

The report is written with ability, and affords evidence that the author is acquainted with the business to which he has been called. Being intended, however, for a community of readers to whom the subject is comparatively new, it does not, and it could not be expected that it would, contain anything particularly novel to those who have for many years read the reports of other similar establishments.

7th. During the past year the Pennsylvania Hospital for the Insane, has been most of the time occupied by patients to the full extent of its accommodations.

Number at beginning of the year - - - -	188
Admitted in course " " - - -	215
Whole number " " - - -	403
Discharged in course of the year - - - -	203
Remaining at close - - - - - -	200
Of those discharged, there were cured - - -	120
" " " died - - - -	17

Causes of death.—Exhaustion following acute mania 5, chronic disease of brain 3, pulmonary consumption 2, congestion of lungs 1, old age 1, effects of accidental fall 1, prostration, incident to long-continued excitement and a refusal of food, 1.

In his remarks upon the premature removal of patients from the hospital, Dr. Kirkbride informs us that, "as early as 1754, the Managers of the Pennsylvania Hospital resolved to admit no insane person who was not allowed to remain twelve months in the house, if not cured sooner, or deemed by the physician incurable."

Such should, if possible, be one of the rules of every institution for the insane. The number of cures would then undoubtedly be from thirty to forty per cent. greater than under existing circumstances.

	Males.	Females.	Total.
Patients admitted since opening of the hospital	773	611	1391
Discharged and died - - -	671	520	1191
Discharged cured - - - -	357	276	633
Died - - - - -	74	56	130

A building 40 feet by 26, and one story high, was erected during the past year, at the distance of 186 feet west of the central portion of the main edifice of the hospital. It is occupied as a museum and reading-room for the patients, and is furnished with minerals, shells, and other objects of science and curiosity, as well as with newspapers, periodicals, and engravings. Such a place of resort is of eminent value in the moral treatment of the inmates of the institution.

"The annual course of lectures has been repeated, and with results quite as satisfactory as detailed in previous reports. A full audience, respectful attention, correct deportment, and an obvious interest in the subjects discussed, have been almost invariably observed, and no one who has watched the progress of this part of the system of treatment can doubt that good effects have resulted from it.

"In no branch of treatment for the insane," says Dr. K., "is there greater room for progress, nor one in which important results are more likely hereafter to be attained, than in that which is directly mental in its character. It is not in the early period of the disease that it is so essential, but after the acute stage has passed—where the malady appears disposed to assume a chronic form, or even where individuals seem to have reached that point at which they are too apt to be styled hopeless; and where neglect and ill treatment are sure soon to make them so. It is, indeed, to the mentally lowest class of patients in our hospitals, that attention should be most steadily directed; it is among these that will yet be found the widest sphere for benevolent labor, and from which results will occasionally flow, that will reward any one who engages in the work in the true spirit of perseverance, and without faltering, because the field is less promising than some others. It has always been an object in this hospital, as far as possible, steadily to increase the means of direct mental treatment for all the patients, but especially for those who reside in the lower wards.

"The reading aloud to patients, often to a class few of whom ever take a book in hand, has been attended with the most satisfactory results. No more beautiful change has been effected in an entire class of patients, than is to be witnessed in both our lodges at certain hours, during which the teachers are reading to the assembled companies. On these occasions, there are rarely more than three or four, often only one or two absent, out of twenty of what is styled the worst class of patients; and the conduct of all present, and the attention given to the reading, has on many occasions been truly surprising. These hours seem to be looked forward to with the proper feeling by many, and the visits of the teachers are evidently a source of pleasure to the patients generally. The good effects of this kind of reading are also obvious, in the other wards, in which it is pursued regularly; but it is in the lodges that they have been most striking. Some months since, as one of the means of still further testing the influence of provision for more extended means of amusement, instruction, and occupation for the class of patients under notice, a piano—not so good as we could desire, but the only one then available—was placed in one division of the lodge for females. I hazard little in saying that no instrument in the institution has been more used within the last few months, has given more pleasure, or been more useful to those who have used or listened to it. Ladies whose minds appeared lost—who had not seen an instrument of the kind for many a long year, and who were supposed utterly incapable of using one—were found to be gradually attracted to it, and, by practice, seemed to be carried back in some faint degree to the feelings and tastes of other days; and, thus employed, have been calm, when ordinarily they were excited, and have even been able to impart no little pleasure to those around them."

8th. Dr. Stribling, of the Western Asylum, Virginia, has lived to see his infant institution—infantile in size, if not in age—grow to the goodly stature of a man, and, unfortunately, now about to assume the unwieldly dimensions of a giant. He informs us, in this report, that when the additional buildings already commenced shall have been completed, there will be accommodations for more than four hundred patients. Its capacity will then equal that of the hospital at Worcester, Mass., and be exceeded in this country by the asylum at Utica alone.

	Males.	Females.	Total.
Patients at commencement of year -	121	86	207
Admitted during the year - - -	39	31	70
Whole number - - - -	160	117	277
Patients discharged during the year -	42	30	72
remaining at end of year - -	818	87	205
Of those discharged, there were cured -	21	19	40
died - -	16	6	22

Causes of death.—Marasmus 10, cerebral congestion 3, phthisis pulmonalis 1, chronic diarrhœa 1, exhaustion and old age 1, epilepsy 1, chronic aphthæ 1, hydrothorax 1, dysentery 1, cerebritis 1, dyspepsia 1.

The following remarks by Dr. Stribling, illustrate the experience of every physician charged with the management of a public institution for the insane. We copy them in the hope of contributing to the dissemination of truth, and the lessening of the evil complained of.

"There is one other topic upon which it may be well here to say a word, as it too frequently happens, notwithstanding our efforts to correct the evil, that our difficulties are greatly enhanced, and the comfort of the patient materially impaired by his being decoyed, as it were, to the asylum; discovering, only after his arrival in the neighborhood, that he is the victim of deception. The friends of the insane, influenced by a natural affection, and averse to witnessing the effects of coercion upon them, console themselves with the reflection that, after they reach the asylum, should they be unwilling to remain, there are appliances to compel submission without subjecting the unfortunate individual to public exposure, whilst sheriffs and other officers too frequently resort to stratagem in order to save themselves trouble. Could all be made sensible of the mischievous effects of such a course upon the afflicted individual after he enters the asylum, we can but think they would willingly undergo the sacrifice of feeling, or bear with the trouble which a different course might impose. One of the effects most to be deplored is, that the individual having been betrayed by those whom he had known longest and had much confided in, becomes, of course, suspicious of the officers of the institution, who are strangers to him, and hence, our influence is greatly impaired.

"In addition to this, many patients reason themselves into the belief, that, as they were brought to the asylum by treachery, they have a moral right to resort to artifice to effect their escape; and consequently, unless kept as prisoners, closely confined to their apartments, or subjected to the constant supervision of an attendant, they succeed, causing trouble and expense to the institution, and often protracted and painful anxiety to their friends. We can but repeat the advice heretofore tendered, that all patients, whatever the character or degree of their insanity, be frankly apprised, by those having charge of them, *why* they are to be removed from home, and *where* they are to be placed; and, in the event that they resist, that any degree of force, which the case may call for, be resorted to rather than evasion or deception!"

9th. Dr. John Evans, the former superintendent elect of the Hospital for the Insane in Indiana, resigned the office about a year since, and Dr. R. J. Patterson, for some time senior assistant physician in the Ohio State Asylum, was appointed as his successor.

The report before us was issued in October last. At that time apartments for the accommodation of about fifty patients were completed, and it was expected that the institution would be opened in the course of the following month.

The buildings, when finished internally, will furnish apartments for two hundred patients. Dr. Patterson thinks it will soon be fully occupied, as he had already received more than fifty applications. P. E.

Art. XXVI.—*An Account of some of the most important Diseases of Women.* By Robert Gooch, M.D., with Illustrations. Second edition. Philadelphia: Ed. Barrington and Geo. D. Haswell, 1849. 8vo. pp. 322.

A Practical Compendium of Midwifery; being the Course of Lectures on Midwifery, and on the Diseases of Women and Infants, delivered at St. Bartholomew's Hospital, by the late Robert Gooch, M.D. Prepared for publication by George Skinner, M.R.C.S. Fourth American edition. Philadelphia: Ed. Barrington and Geo. D. Haswell, 1849. 8vo. pp. 339.

We regard the publication of these works with pleasure, as affording evidence that the profession are not content to depend for knowledge on the compendiums and text-books, prepared to facilitate the progress of the student, but are disposed to seek for information at its original sources. It may be well for the young student, before he is competent to form a judgment, to rely upon the digests prepared for his guidance; but the advanced student, and the practitioner who wishes to be something more than a mere routinist, must consult the great masters of our science, study their opinions in their own writings, compare their views, and form his own opinions. Among these great masters Robert Gooch will always stand pre-eminent, and the profession are under obligations to the publishers for placing his works within their reach.

Art. XXVII.—*Anæsthesia, or the Employment of Chloroform and Ether in Surgery, Midwifery, &c.* By J. Y. Simpson, M.D., F.R.S.E., Professor of Midwifery in the University of Edinburgh, &c. Philadelphia: Lindsay & Blakiston, 1849. 8vo. pp. 248.

This work comprises the substance of several essays written at different times by Prof. Simpson, and published in the *Monthly Journal of Medicine,* and of the verbal statements of his experience in the use of anæsthetic agents, made to some of the medical societies of Edinburgh, and reported in their proceedings. These are now first collected in a volume by the author, and form a very interesting history of anæsthetic agents, coloured somewhat of course by the zeal of the author, who is well known as the introducer of chloroform as an anæsthetic agent, and the enthusiastic and able advocate for its employment.

The author has not confined himself to his own experience, which is very extensive, but has collected much valuable information from the practice of various public hospitals; and his volume embodies much valuable and interesting information on the subject which should be carefully weighed by every practitioner of medicine.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Development and Functions of the Spermatozoa.* By Drs. Wagner and Leuckardt.—The elaborate inquiries of the authors into the constitution of the seminal fluid of different animals, have led them to some new and valuable results, which tend to modify in several particulars the opinions formerly entertained. The account which they now give of the origin of the spermatozoa is as follows: 1. All spermatozoa originate in "formative vesicles," which appear to resemble the secreting cells of glands, in being metamorphosed epithelium-cells of the glandular tubuli or follicles. 2. From these formative vesicles, the spermatozoa are produced in one of the three following modes: *a*, by the conversion of the cell-membrane and nucleus of the formative vesicle itself into the spermatozoon, a method in which the change is the least possible, and which is only found among the Nematoid worms; *b*, by the metamorphosis of the nucleus of the formative vesicle into the spermatozoon, a method which is much more common, especially among the lower animals, in many of which (as Chilopoda, Acarina, and Entomostraca) the spermatozoa remain as solid massive corpuscles, resembling the nuclei from which they sprang, instead of having the filiform shape of ordinary spermatozoa; *c*, by the endogenous development of cells originating in the nucleus of the parent cavity, each young cell producing a spermatozoon within it. This last method is that which we find in all the higher animals; but its latter part may take place in two ways. The parent vesicle may burst and set free the young cells, before the latter have begun to form the spermatozoa, which then evidently issue from them. But it frequently happens that the development of the spermatozoa takes place, whilst the cells within which they are formed are yet within the parent vesicle; and the walls of these cells give way, so that the spermatozoa come to be associated together in bundles within the parent-cells, as formerly described by Wagner, and are finally set free by their rupture.

The authors have come to the conclusion that the spermatozoa are the essential constituents of the semen; having met with cases in which the liquor seminis is altogether absent; and being also greatly influenced by the apparent impossibility of the fertilization of ova by liquor seminis, when there is no copulation, and the semen is diffused through water, as in most fishes.—*Cyclop. of Anat. and Phys.*, Part xxxiv.

---

2. *Hassal's Parasite.*—In the *Zeitschrift*, Bd. vii. Heft 3, Henlé corrects an erroneous statement of Hassall, who has described a peculiar kind of corpuscle found in coagulated fibrin of the heart as a parasite, and of an animal nature. Henlé refers to the description of this given in the second volume of his "*Handbuch der Rationellen Pathologie.*"

Hassall states, that the corpuscles are of the size of colourless blood corpuscles, or even three or four times larger, and of an irregular form, which generally approaches the circular, and that they consist of a nucleus, of irregular shape, and of a number of concentric membranes. Acids, and especially the sulphuric, greatly assist their discovery. Hassall incorrectly ascribes their discovery to Gulliver; but the description and drawings of this author, in his translation of "*Gerben's Algemeine Anatomie,*" only treat of colourless blood corpuscles, with many nuclei, and anucleate, collapsed corpuscles, which were probably clods of fibrin. Hassall adds, in a note, that he has found these concentric corpuscles in a thymus gland which had lain many hours in water.

Lately, Henlé has often found corpuscles to which (some optical illusions apart) Hassall's statement would completely apply, in an effusion which seemed to come from the glands of the larynx. This effusion contained, together with pus corpuscles, groups of large granule cells, containing fat and some pigment; and he thus had the opportunity of satisfying himself that these concentric bodies are formed by molecules of fat included in the granule cells. They are most numerous and complete when the granule cells are digested in acetic acid, after having laid for a day or two in distilled water. Under these circumstances, the fat within the cells runs together into large drops, or it breaks out and unites itself into small or large masses, which often adhere to the cells. These masses are mostly round, clear, and colourless; but they are rendered very distinct by lines which take a course parallel to their contour. These drops do not contain a nucleus, but the shifting of the focus causes their centre to become darker or clearer than their circumference, and thus gives a false appearance of one. In like manner, the concentric striæ are purely an optical phenomenon, depending on the refractile powers of the fat; so that the same corpuscle, in different situations as regards the focus, appears now simple and pale, now striated and dark. Fresh granule cells, treated with acetic acid, give rise to the same appearances, save that the striæ are usually fewer in number; and these are, also, no doubt identical with the concentric corpuscles of Hassall. The presence of an acid is not essential to their production.

A figure in a previous volume of the *Zeitschrift*, to which Henlé refers, quite corroborates this view. And we may add, that, besides the internal evidence of accuracy which his statement bears, there are, perhaps, few microscopists that have not, at one period or other, been deceived by bodies of this kind, for a longer or shorter space of time.—*Med. Times*, May 26, 1849.

---

3. *Structure of the Papillæ of the Tongue.*—Mr. Hassall states that a minute and careful examination of the papillæ of the tongue has convinced him that the term conical, as applied to certain papillæ of that organ, is a misnomer, and that these are excavated and cupped in form.

Corresponding with this general shape of the papillæ, and determined by it, is the arrangement of the secondary papillæ, of a number of which each compound papillæ is made up in a circle, the boundary of which corresponds with the raised margin of each cup.

The vessels and nerves supplying these papillæ of course follow a similar circular distribution.

In the recent state, and while the epithelium still remains attached to the subjacent structures, it is not easy to make out the true form of these cupped papillæ, in consequence of the number of filiform processes which are attached to them, obscuring it; near the front of the tongue, however, and where these filamentary processes are either entirely absent or very short, the cupped form may be very readily determined, even while the epithelium is still adherent.

It is worthy of remark, that the processes in question, which are constituted of epithelium, follow the same circular arrangement which appertains to the papillæ and loops of blood-vessels and nerves; and also that they spring from the raised margins of the cups.

These observations are both interesting and important, because they disprove the opinion entertained by many physiologists and microscopists, that the filiform papillæ of the tongue have merely a mechanical office to perform, and that they are not concerned in any degree in the sense of taste; the form and arrangement of the several parts of each papillæ showing an evident adaptation to the reception of gustatory impressions.

The filiform appendages entangle and delay the smaller particles of the food, and the cavities of the papillæ receive the nutritious juices, and retain it for a time sufficiently long to produce the necessary impression on the sensory papillæ by which each cup is encircled.

Considered altogether, it would be difficult to imagine or devise an arrangement of parts more admirably adapted to the purpose to be fulfilled.—*Lancet*, March 1849.

4. *On the Minute Structure and Mode of Contraction of Voluntary Muscular Fibre.* By W. Murray Dobie, Esq.—The first part of the author's paper contains a short statement of the various discoveries which have been made in the minute structure of voluntary muscle. The last author referred to is Mr. Bowman, who has described the ultimate fibrilla of muscle as composed of clear and dark spaces, arranged alternately in longitudinal series. The author then refers to the descriptions taken by various writers from the specimens of muscular fibre prepared by Lealand, a London optician. These specimens show the ultimate fibrilla to consist of clear, oblong, rectangular spaces, bounded by a distinct line, and joined end to end. In the centre of each there is a small, dark, oblong space, between which and the peripheral line of the clear space, there is a clear interval. From his observations on the muscles of all classes of animals, the author considers that the structure of muscle is still more complex than has yet been described. He finds an ultimate fibrilla to consist of quadrilateral spaces, which are of two kinds—the dark and the clear; these alternate regularly, and are arranged in single longitudinal series.

The dark and the clear spaces are sometimes equal in length—more frequently the latter are the shortest, and in the lobster and salmon appear sometimes as a mere line. When the fibre is stretched, the clear space is elongated and flattened, while the dark space appears somewhat elevated. These spaces are bounded laterally by a distinct line, which appears continuous; they are also separated from each other by distinct lines.

The clear space is crossed transversely at right angles by a *dark* line, which divides it into two equal quadrilateral spaces. The dark space is similarly divided by a *clear* line. Each space, therefore, consists of two compartments, which are similar in every respect to each other. Such is the appearance presented when the centre of the fibrilla is in perfect focus. When the surface is brought into focus, the light space appears *dark*, and does not show a cross line; while the dark one appears light, and shows the cross line *dark*, and more decided than before. The author has further found that, when the fibrillæ are separated, a delicate homogeneous membrane stretches from one to the other. This membrane is quite distinct from, and much more delicate than, the sarcolemma. In the skate it is striated, the striæ corresponding to those seen on the fibrillæ: this appearance is attributed to the membrane being more elevated or thicker opposite the dark spaces.

The author has made some observations on the contraction of muscular fibre, as it is seen to take place in the tail of the tadpole, when the animal is placed uninjured under the microscope. On contraction taking place, the transverse striæ are seen to approach rapidly, and to recede as rapidly on relaxation. The blood is driven from the part by the contraction of the muscle, but again returns on relaxation taking place.

Mr. Dobie concludes his paper with some directions as to the mode of preparing specimens.—*Monthly Retrospect*, from *Annals of Nat. Hist.*, Feb. 1848.

ORGANIC CHEMISTRY.

5. *Chemical Pathology of Diarrhœa.*—Oesterlin, in *Henlé and Pfeuffer's Zietschrift, Bd. VII. Heft* 3, contributes an important paper on the Chemistry of Diarrhœa, a disorder which is exceedingly prevalent in the Baltic provinces, especially in conjunction with ague and malaria disorders.

The older chemical schools attributed extraordinary appearances to the excrements, bile, and blood of the dysenteric, but valid researches have not yet been made; so that this disease, which offers most to the chemist, has perhaps been most neglected by him. And in pursuance of these pathological errors, therapeutic singularities have obtained. Diarrhœa has been treated with mercurials, since the bile is supposed to act some mysterious part in the tragedy; or patients already purged ten and twenty times in the hour, have been treated with laxatives, on account of an alleged dependence of tenesmus on accumulation of feces. It was only a few years ago that Masselot, and Follet, for the first time analyzed the blood in this disease; and their analyses, grouping many cases together, will allow little stress to be laid on the results.

Many circumstances had for fifteen years drawn the author's attention to the evacuations in these diseases, especially in the cases seen in the Baltic epidemic of the autumn, 1846. Their appearance, the blood they contain, their physical properties, and their enormous quantity in the twenty-four hours, all indicate them as an important element of the disease. So, likewise, the often rapid collapse, the rapid wasting (especially of the face), and the manner in which persons previously in robust health are completely prostrated, all these circumstances, which are unexplained by anatomical alterations in the intestinal canal, point to the statement, that the materials set free from the body greatly preponderate over those taken into it, and that this preponderance occurs with a rapidity and intensity differing only in degree from Asiatic cholera. But though the dependence of the two sets of facts be apparently obvious enough, yet he had never seen any experiments upon either the composition or quantity of the evacuations. After long delay, a favorable opportunity presented itself in the following cases:—

The three first were of diarrhœa; the last was the diarrhœa occurring in the latter stage of Bright's disease. They seem to have been severe, but not extraordinary cases, and the examinations were not made in the earliest and most acute stage. The first and last terminated fatally; the others completely recovered. The analyses were conducted with the assistance of Dr. C. Schmidt. The method of examination, in most instances, included the urine; but the small quantity of this, and, in all but the taste, its healthy character, precluded any error of consequence.

In the four cases, on an average, the quantity of evacuation in the twenty-four hours, amounted to 2433 cubic centimetres, or to 721 cubic inches English.

The average of nine examinations gave the daily loss of albumen 50½ grammes, or 782¾ grains English. The albumen was (a) albumen of serum (b) epithelial structure; on an average of three comparisons, the latter amounted to one-sixth of the former variety.

On an average of eight examinations, the quantity of fixed salts thus removed in the twenty-four hours was 14½ grammes, or 224¾ grains English.

The author compares the large quantity of albumen thus obtained with two other cases; one the flux produced by calomel and jalap, in a case of chronic disease of the brain; the other, the (loose?) stools of a typhoid patient. In the diarrhœa, the albumen amounted, in the average of eight examinations, to 24.75 parts in the thousand; in the two latter instances, to about 3½ parts per thousand, the two being nearly alike, 3.3 and 3.9. This is scarcely a seventh of the preceding quantity.

Comparing the composition of the stools with that of the blood, from which they must be derived, the following points are noticeable:—

The quantity of albumen in the whole blood-mass may be estimated at 800 or 900 grammes—about 29½ oz. English. Thus, in less than three weeks, such a daily loss as the estimate above would equal the whole quantity normally present. Or, daily, a seventeenth of the whole quantity is removed. Again, taking the quantity of fixed salts present in the blood as about one-tenth of the albumen, the daily loss may be estimated at 1-170th of the whole quantity in the blood.

The *absolute daily loss* of albumen fluctuated considerably; but the *per centage* of albumen present, or its number of parts in the thousand of evacuations, had a very constant and well-marked relation to the severity and date of the disorder; subsiding as it subsided, or aggravated on its relapse.

Some blood taken by cupping was examined in two instances. In both the quantity of water was increased, the quantity of salts was nearly normal, while the remaining constituents had decreased. The impoverished blood had been able to replace the water lost, while the organic constituents were still missing.

The author goes on to apply these chemical results, to explain the condition of the different organs and functions. The small anæmic pulse, the sunken eye, the small quantity of urine, the condition of the secretions generally, are all referred to in turn. But our readers will have heard or read most of these before. We have, therefore, only to add, that he appears inclined to regard diarrhœa as essentially a chemical process, manifested by the tendency to thickening of the mucous membrane, and exudation from it. To this we can only say, that on like grounds we must call all secretion, both healthy and morbid, a *chemical* process. This we must hesitate to do. Yet, until we can state why the healthy intestine secretes healthy intestinal mucus, we cannot tell why the diseased one should separate its diseased product, however different in appearance and quality the latter may be.—*Med. Times*, May 19, 1849.

---

6. *On the Source of Sugar in the Animal Economy.* By Dr. Bernard.—Sugar is extensively distributed throughout the vegetable kingdom, but it exists also in animals. Vegetables do not find it ready made in the earth, but form it by some power of internal organization. Is it the same with animals? or is the sugar found in their bodies exclusively the product of their vegetable ingesta? This is the important question which it is our intention to submit to the test of experiment.

Sugar enters largely into the composition of the food of animals. The kinds of sugar are,—1st. Cane sugar, such as is found in the sugar-cane, beet-root, carrots, &c. 2d. Grape sugar, such as exists in grapes, and other saccharine fruits. Fecula should also be considered as saccharine matter, inasmuch as it is convertible into low sugar during the process of digestion. 3d. Sugar of milk, which is found in the milk of animals.

This is not the place to trace the distinctive characters of these forms of sugar, nor to determine the alternate changes which they undergo in order to become subservient to nutrition. I need only state, that as certain alimentary substances are known to furnish considerable quantities of sugar, we may consider them as the source of the saccharine matter which we discover in the blood, or other animal fluids. It is admitted that sugar is to be found in the healthy blood, after the ingestion of sugar, or matters convertible into sugar. But chemical facts teach us, on the one hand, that starch is the only principle which is convertible into sugar; and, on the other hand, in the belief that the animal economy has not the power to originate a principle, but only to transform those which are presented by the vegetable kingdom, it has been denied that the animal organism can form sugar, and the only power recognized is that of destroying and eliminating it. The facts which will be developed in the following essay, show us that such an opinion is not warranted by physiology.

First Series of Experiments.—It has been observed, that during the digestion of saccharine or amylaceous matter, the blood contains sugar, and it has thence been concluded that the sugar is furnished by the aliments. The result of experiment taken alone is exact; but the experiment itself is incomplete, and the conclusions therefore false, as will be seen.

1st *Exp.* I injected thirty grains of starch, dissolved in a pint of water, into the stomach of a rabbit which had eaten oats and carrots. Five hours after, the animal was destroyed in the usual way, and thirty grains of blood from the heart collected. After coagulation, sugar was distinctly found in the serum. The stomach and intestines contained sugar, arising from the carrots and the transformation of the farina.

2d *Exp.* A strong dog was destroyed five hours after eating 300 grains of the jelly of starch. The serum of the blood taken from the heart contained a notable quantity of sugar. The contents of the stomach were acid, and contained no sugar; those of the intestines were alkaline and strongly saccharine.

3d *Exp.* A dog ate plentifully of sheep's head, and was killed after seven hours. In the serum of the blood sugar was distinctly found. No sugar was found in the intestinal canal.

4th *Exp.* A dog was killed after fasting two days. Sugar was unequivocally found in the serum.

The above experiments were repeated several times, and always with the same results. The general fact established is readily seen, viz., that sugar is constantly present in the blood of animals, whatever has been the nature of their food.

Second Series.—Whence is the sugar derived in the case of the animals fed on meat, and in that which had not eaten for two days previous to death? This is the question for the solution of which fresh experiments are required. It may be fairly presumed that the sugar was not formed in the heart, but had been transported thither from some other parts of the body. To determine more exactly the locality of its formation, I performed the following experiments.

1st *Exp.* A large, strong dog being killed, seven hours after a hearty meal of cooked meat and bones, digestion was found to be in full operation, and the gastro-intestinal circulation, and chyliferous ducts fully distended with their respective contents. I obtained, 1st, some blood from the junction of the splenic vein with the vena portæ; 2d, some chyle from the thoracic duct; 3d, blood as before from the cavities of the heart. I then carefully separated the contents of the stomach and bowels, and tested each separately for sugar with the subjoined results:—

1. The alimentary matters of the stomach and small intestines had an acid reaction, and afforded no evidence of the presence of sugar.
2. The milky serum afforded by the coagulation of the chyle was also destitute of sugar.
3. The blood of the vena portæ being allowed to coagulate, the serum was slightly opalescent and alkaline. I distinctly ascertained the presence of a large quantity of sugar.
4. The blood from the heart also presented sugar, but in less abundance.

The experiment was repeated several times, and with always the same result, but without my being able to comprehend how the portal blood should contain so large a quantity of sugar, while none existed in the small intestines. Reflecting, however, that this matter must be derived from some neighbouring viscus, I proceeded as follows:—

Having quickly destroyed a dog which had, some hours since, fed on matters destitute of sugar or fecula, I opened the abdominal cavity, and placed ligatures, 1st, on the branches of the mesenteric veins, close to the small intestines; 2d, on the splenic veins, close to the spleen; 3d, on the pancreatic vein; 4th, on the trunk of the vena portæ as it entered the liver. I then collected blood from each of these sources, and examined it. 1. Sugar was not found in the blood of the intestines, nor in their contents. [The original states that sugar *was* found, but this is evidently an error of the press, as appears from the context.—*Trans.*] 2. Sugar was not present in the blood, either of the splenic or pancreatic veins. 3. The blood of the portal veins contained a large quantity of sugar, as did also the tissue of the liver itself.

It was thus made evident that the liver was the source of the saccharine matter. But it must be asked, how is it that sugar is found in the portal veins; for supposing it to be formed in the hepatic glandules, it should be carried into the general circulation by the hepatic veins, and not flow back into the portal branches. This reflux is, in my opinion, easy to be understood; for, in fact, the circulation in the porta is mainly effected by the pressure of the abdominal parietes during life; if, therefore, the pressure be removed as in opening the abdomen, there would immediately be a reflux from the absence of valves in the portal system.

We have ascertained, by the above experiments, that sugar is found in the liver, and is carried into the general circulation by the blood of the hepatic veins, the reflux into the porta being accidental; but we regard this discovery to be so important, that we think it right to state the processes employed in the investigation, in order that others may confirm, or confute, our conclusions, by following in our footsteps.

Tests for Sugar in the Liver itself.—A portion of liver is to be beaten in a mortar, and then boiled in a small quantity of water, and filtered. The filtered liquid possesses all the properties of a saccharine fluid. It becomes darker on boiling with liquor potassæ, and it reduces the double tartrate of potass and copper. If yeast be added at a certain temperature, fermentation ensues; if the fluid be distilled after fermentation, alcohol may be obtained.

The attempt was made to procure sugar in substance by operating on large quantities of liver, but although a fluid of syrupy consistence was obtained, crystallization did not take place.

The recognition of sugar in the blood is a very simple affair. The blood is allowed to coagulate, and the serum placed in a tube furnished with a stopper; to this is added a sixteenth in bulk of the tartrate of copper and potash, and boiled, when a quantity of the salt is reduced, proportionate to that of the sugar present. By this process the smallest traces of saccharine matter may be detected. Both in this test, as well as that by fermentation, it is necessary to operate on the serum while it is fresh, as sugar is rapidly decomposed spontaneously.

We have now traced the sugar of animals to the liver, but we have further to determine whence it is derived. Two suppositions may be entertained; either it results directly from a transformation of certain elements of the liver, or it is derived from the food. It may be said, in fact, that the animals which had been fed exclusively on animal food, or starved, might have eaten fecula or saccharine food the few days previously, and that the sugar thence derived had accumulated and been detained in the liver; and it might be added in support of this view, that the liver is known to retain arsenic and other poisons for a length of time. Without actually denying this view, the following experiments would seem to oppose it:—

1st *Exp.* A full-grown dog was starved for eight days, and then fed abundantly on cooked meat for eleven days; after this he was destroyed. The blood contained an abundance of sugar. This experiment was repeated several times; and certainly it would appear probable, that sugar, derived from food given antecedently, would have been eliminated after a lapse of nineteen days.

2d *Exp.* A rabbit, after a meal of carrots, was subjected to the division of the pneumo-gastric nerves. He was found dead seventeen hours after. *No sugar was found in the blood or liver.* This experiment was repeated with similar results. In both animals the bile, which is generally alkaline, was found to have a distinctly acid reaction.

This effect of division of the pneumo-gastric nerves is remarkable. As a further proof that sugar is found independently of food, I may state that I have found it in large quantity in fœtal calves.

From the above facts the author draws the following conclusions:—

1. That diabetic sugar is a normal ingredient in the blood and liver of animals.
2. That the formation of sugar takes place in the liver, and independently of saccharine or feculent food.
3. That this formation of sugar commences before birth.
4. That it is allied to a state of integrity of the pneumo-gastric nerves.—*Prov. Med. and Surg. Journ.*, Feb. 7, from *Archives Générales de Méd.*

MATERIA MEDICA AND PHARMACY.

7. *On Sugar as an Antiphrodisiac.* By M. Provencal.—Camphor has hitherto, by reason of its prompt effects, been considered as the best antiphrodisiac, and as the best antidote to cantharides. But sugar is a far more powerful and useful remedy, diminishing the venereal ardour, and repairing, in some degree as an aliment, the melancholy effects of over-indulgence. The dose is a

pound or more, daily, in a quart of water, wine, or milk, according to the nature of the case. In the case of general irritability, as observed in members of the religious fraternity, and in priapism, it is best given in cold water. When excitement of the genital organs is complicated with irritation of the chest, milk is the best vehicle.—*Brit. and For. Med. Chir. Rev.*, from *Rev. Méd.-Chir.*, tom. v.

—

8. *Physiological Action of Nitrate of Potassa.*—By F. Löffler.—The following account of the action of nitre, is derived from a series of experiments made by five students on their own persons, while in health. The salt was taken in solution, with the addition of a little mucilage, in quantities increasing gradually from one to five drachms daily. The proportion for each day was divided into five separate doses. Each student took in this manner, during the course of one experiment, from three to five ounces.

After from eight to twelve days' use of the medicine, the blood drawn from the veins presented the following characters: 1. In colour and density it resembled cherry juice. 2. The number and size of the colourless blood corpuscles were increased. 3. The blood globules were paler in colour. 4. The blood coagulated very quickly. (The average time required for the coagulation of blood taken from the five subjects of experiment, previous to the employment of the nitre, was ten minutes—after its use, only five minutes and three quarters.) 5. Increased proportion of water, and corresponding diminution of the solid constituents of the blood. 6. Diminution of its fat. 7. Increased proportion of ash in serum. 8. Diminished firmness and elasticity of the crassamentum, the solid constituents of which were less in quantity than in normal blood.

The symptoms observed from the use of the nitre were general weakness, and indisposition to exertion of body or mind, increasing in intensity with the continued employment of the drug; low spirits; fatigue from the slightest exertion; the muscles and joints felt as if they had been bruised, and the knees were especially weak; constant disposition to sleep, slow and weak pulse. This last symptom began to show itself on the second or third day, and gradually became more marked; so that towards the end of the experiment the frequency of the pulse was several times reduced to twenty beats in the minute. The pulse did not recover its normal strength and frequency for seven or eight days after the discontinuance of the medicine. Towards the end of the experiment, the face became distinctly paler and thinner. The appetite continued good, and the digestion was not disordered. The action of the bowels was for the most part healthy, at other times the drug occasioned some pain of the belly, followed by purging. On account of the great heat which prevailed while the experiments were made, no certain deductions can be drawn in reference to its action upon the kidneys. The quantity of urine, on several occasions, exceeded by as much again the amount of fluid drank, and generally there was more or less diuresis.

The author promises to repeat his experiments when the temperature is more suitable, to ascertain precisely the changes induced in the composition and quantity of the urine.—*Schmidt's Jahrb.*, 1848.

[In the *Union Med.*, of March 3, M. Vanoye reports a case, where one and a-half ounces of the nitrate of potassa were given, by mistake, to a young female, ill of typhus fever. For an hour she experienced considerable uneasiness and inclination to vomit. Her face became remarkably pale, contrasting strongly with its previous febrile flush. Repeated vomitings, alternated with fainting, soon succeeded. The vomited matter contained bile, and a large quantity of blood. She complained of acute pains in the epigastrium. From being strong and full, the pulse was now small and irregular, and fears were entertained for the patient's life. She recovered. The treatment consisted in cold emollient drinks, a little laudanum, and sinapisms. She had no desire to urinate until about four hours after taking the nitre, when she passed some clear, high-coloured urine, which gave no deposit on cooling. Afterwards the quantity of urine was not greater than the normal. It is worthy of remark that, on the day following, the patient was convalescent from the typhus fever. This fact is the more surprising as, of three members of the same family who had typhus at the same time, one died, and the other two were long and seriously ill.

M. Vanoye's case is peculiar in the entire absence of diuresis, which can be accounted for only by supposing that the salt was rejected by vomiting. The action being purely local on the gastro-intestinal mucous membrane, absorption was prevented, and hence the secondary effects could not be manifested.] —*Monthly Retrospect*, April 1849.

9. *Experiments on Senna and Argol Leaves.*—According to Heberlein, spirit of wine extracts from senna leaves only chlorophylle and extractive matter, the *cathartine* of Lassaigne and Feneulle, which does not, however, possess in the slightest degree the purgative effect ascribed to it by these gentlemen; for after repeated experiments with smaller quantities, the alcoholic extract of one and a-half ounces of senna leaves were taken without any effect. The uselessness of treating senna leaves with spirit of wine, and the inefficacy of tinctura sennæ are therefore obvious. The aqueous extract of four drachms of senna leaves, which had first been exhausted by spirit of wine, effected evacuations with griping: so that the griping principle had not been removed by the spirit. The leaves used for these experiments were those of Tripoli senna, which are quite free from the leaves of *Cynanchum Argheul.* The latter, which are found among the Alexandrian senna, are in bad favour among physicians, but without just grounds, for experiments made with the picked leaves of *Cynanchum Arghuel* showed them to be harmless. An infusion of two and a-half drachms produced no effect or inconvenience.—*Monthly Retrospect*, April 1849, from *Pharmaceutisches Central-Blatt*, No. 54.

10. *Sulphate of Amorphous Quinine.*—As a therapeutic agent, Mr. Bullock, of London, considers this preparation in every respect equal, and for some purposes superior, to the crystalline variety of quinine. It is now some years since Mr. B. first recommended it to the profession, during which period its value as a substitute for the ordinary sulphate has been most extensively tested in all those diseases in which quinine is employed. As a periodic in intermittent fever and neuralgia, it appears to be equally energetic with the crystalline preparation, and as a stomachic and general tonic, many bear testimony to its greater efficiency, from the ease with which it is borne by the stomach. The headache, and other unpleasant effects, which frequently result from the exhibition of quinine, are rarely occasioned by the amorphous salt.

The salts of amorphous quinine being deliquescent, the sulphate is sold in solution, five minims of which contain a grain of the salt. This is very convenient in prescribing. Mr. B. recommends those who desire to employ it in combination with a vegetable acid, to order the acetate which is prepared in the same manner as the sulphate. The following are the proportions of the different acids required for the preparation of the salts of amorphous quinine.

One grain of amorphous quinine requires

4 minims dilute sulphuric acid.
3 " hydrochloric acid.
5 " nitric acid.
3 " phosphoric acid.
7 acetic acid.
2 grains citric acid } Mix with the amorphous quinine,
2 " tartaric acid } then add a few drops of water.

Rub the amorphous quinine with the acid in a mortar until it is dissolved.

The price of the sulphate of amorphous quinine, which is less than one-half that of the crystalline variety, strongly recommends it to the physicians of hospitals, dispensaries, and other charitable establishments, as well as to country practitioners, who will find it a considerable economy.

[From extensive trials, we are satisfied that the solution of the sulphate of amorphous quinine, represents all the most important physiological and therapeutic properties of cinchona bark. We found it eminently useful in improving digestion, and in restoring the normal tone to the stomach of convalescents from cholera. In diseases of debility generally, it is an excellent tonic. Equally active with the crystalline sulphate, it is certainly less apt to disorder the stomach in full doses.—*Monthly Retrospect*, April 1849.

11. *On the Employment of Nitrate of Silver as a Vesicant.* By M. Delvaux.—The general action of nitrate of silver on the tissues, seems to be to separate the hydrogen. When this salt is brought in contact with an organic body, it becomes decomposed into nitric acid, oxygen, and metallic silver, in a molecular state. Silver is deposited, and this imparts to the tissue its coloration, whilst the oxygen of the oxide of silver and of the decomposed nitric acid takes up the hydrogen to form water.

When nitrate of silver is brought in contact with the skin, the effect produced varies according to the greater or smaller quantity of salt employed. If the quantity be small, it merely acts on the epidermic cells, which it disorganizes. Metallic silver is reduced to a molecular state, and combines with their elements; the epidermic tissue assumes a blackish brown coloration, owing to the metallic silver itself, and after a time the tissue is detached and drops. Where the action of the nitrate of silver is continued for a longer period of time, the true skin itself becomes affected, the effect produced varying according to whether the disorganization is merely on the surface, or more deeply seated. In the former case, an abundant serosity raises the altered epidermic surface, and produces *vesication*. In the latter, the true skin, being disorganized in its thickness, produces an eschar.

If now, we consider that the skin varies in thickness and sensibility in different parts of the body, and according to age, sex, &c., it will be evident that a certain tact is required to regulate the quantity of nitrate of silver necessary to disorganize the epidermic layers, and procure a vesicatory effect without disorganizing the true skin. The principles by which the employment of escharotics in general is guided will suffice to prevent the occurrence of any unexpected results.

Without proceeding to enumerate all the diseases in which vesication by means of nitrate of silver may produce beneficial therapeutic effects, we will adduce a few cases in refutation of the objections that might be advanced against this form of application.

1. M. Claes, a patient in the hospital of des Viellards, who was recovering from an attack of adynamic pleuro-pneumonia with parotitis, complained, on the 3d of September 1848, of severe pain in the left sub-scapular region, and in the lateral portion of the neck, along the trapezius muscle. The pains increased on the least movement. Exposure to a current of air had given origin to this rheumatic affection. The skin was cauterized in the sub-scapular region with a stick of nitrate of silver, moistened with water at the moment of its application. A bulla appeared in the course of an hour and a-half; epidermis being removed, a slight degree of suppuration was established, and the pain entirely ceased, as if by magic, at the end of about ten hours.

The cauterized spot had been dressed immediately after cauterization with cold cream, and this was continued until the occurrence of cicatrization, which took place within the fourth day.

2. A man named Boufort, came to consult M. Uytterhoeven, at the same hospital. The old man had suffered since the preceding evening from acute stitch in the side. The pains extended along the seventh rib towards the back. As auscultation did not reveal anything abnormal in the thoracic organs, the spot to which the patient referred the pain was cauterized with nitrate of silver, previously moistened with water. The pain disappeared as the operation advanced. A vesicle was produced in the course of an hour. A compress with cerate was applied to the wound. On the following day the pleurodynia was perfectly cured without the treatment being further continued.

3. The same method was immediately employed in the case of Marie Demaître, who had been attacked by pleurodynia in the left side of the thorax. The pain was so violent as to call forth loud cries from the patient. The cure was equally prompt and unexpected, and in the course of the day the pain entirely disappeared. The vesication was treated in the manner usually adopted in the case of ordinary vesicants.

It only remains to add a word or two on the mode of operation of this vesicant. In order to avoid all chance of irregularity, it is necessary to rub the whole surface on which vesication is to be induced, lightly but equally with the point of the stick moistened with a drop of water, and to continue long enough until a gray coloration is produced. This effect is generally obtained in the course of a minute and a-half. If a deeper action be required, owing to the thickness of the epidermis, or a more strongly marked therapeutic effect be sought, the operation must be repeated over the same surface and with the same precautions.

M. V. Uytterhoeven has always found this vesicant answer his expectations most fully, both in private practice and in the wards of the hospital des Vieillards.—*Monthly Retrospect*, June 1849, from *Nouvelliste Médicale Belge.*

---

12. *The Mechanical Leech of* MM. Alexandre *& Co. of Paris.*—This apparatus consists essentially of two parts—an instrument for puncturing the skin, and another for promoting the flow of blood by removing atmospheric pressure from the punctured part. The puncture is effected by a lancet, the blade of which has the form of the cutting apparatus of the leech. This lancet is fixed in the mouth of a tube, and projects about the eighth of an inch beyond the edge of the tube. It may be elevated by a small lever, so that its point shall be within the tube, in which position it is secured by a catch. Attached to the opposite end of the tube, by a piece of vulcanized India-rubber, which acts as a spring, is a piston, which is pressed down by a rod, and, on removing the pressure, is drawn back by the India-rubber spring. The piston being pressed down, the open end of the tube in which the lancet is fixed, is placed over the part to be punctured: the pressure is now removed, when the piston is drawn back by the spring, and exhausting the air within the tube, the skin is forced up into the mouth of the tube. On loosening the lever, by which the lancet has been elevated, the latter is drawn down by a spring, also of vulcanized India-rubber, so as to effect the puncture. The cutting instrument is now removed, and a glass tube with a piston, similar to that already described, is placed over the puncture, the air within being exhausted so that the tube adheres to the part, and the blood flows freely into it. Half-a dozen or a dozen tubes, each of which would draw as much blood as a large leech, might be thus attached in two or three minutes. The apparatus, consisting of a cutting instrument and six or twelve suction tubes, together with sundry implements for cleaning the lancet and tubes after use, are contained in a small case. It is very neatly got up, and we understand from those who have used it, is very efficient. The idea, however, is not new: so long ago as the year 1813, the silver medal was awarded at the Society of Arts to Mr. J. Whitford, of St. Bartholomew's Hospital, for the invention of a somewhat similar apparatus for the same purpose. In Mr. Whitford's apparatus the exhaustion was effected by a syringe, which was found to be inconvenient. The use of vulcanized India-rubber springs, attached to the pistons, by which efficient suction tubes are economically formed, is a great improvement in MM. Alexandre's apparatus.—*Lond. Med. Journal*, March, from *Pharm. Journal,* February 1849.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

13. *On the Analogy and Differences between Tubercle and Scrofula.*—M. A. Legrand concludes an elaborate and valuable series of papers, extending through several Nos. of the *Revue Médicale*, for last year, the fruit of many years' research, he informs us, with the following summary of the results, at which he has arrived:—

1. There undoubtedly exist analogies, which we may call symptomatic, between tubercle and scrofula; that is to say, one of these two morbid principles, the tubercular, may exhibit itself by symptoms which appear to belong to the other; but this is not the case with regard to the latter. 2. Tubercle possesses, so to speak, its morbid individuality, its molecular element—the tubercular

globule—which is often met with in the scrofulous manifestations of tubercle. 3. Scrofula is always deficient in the morbid molecular element, and its existence is only proved by the constancy of the effects which are attributed to it. 4. The chief, or even the only seat of tubercle is in the internal organs, and the external manifestations of the morbid principle irradiate from the centre to the circumference. 5. Scrofula comports itself quite otherwise, and manifesting itself on the skin or periosteum, irradiates thence towards the internal organs, which, however, it never disorganizes in the same manner as tubercle. 6. Tubercle, in spite of the impoverishment of the blood it always induces, does not destroy, at least in the early periods, the inflammatory element, the fibrine, which well explains the occurrence of the phlegmasiæ, which so often complicate it, and which always hasten its disorganizing progress. 7. Scrofula likewise impoverishes the blood, but at the same time it seems to annihilate the inflammatory element. Thus inflammations rarely complicate it, and when such complication does exist, it often favours the cure of the disease. 8. All the changes observed in the blood and urine of tuberculous and scrofulous patients, are evidently consecutive; and they cannot be considered as the cause of these two diseases, whose principle is nevertheless very probably contained in the blood. 9. Finally, tubercle is never curable, or at least such cure constitutes a rare exception, while scrofula is almost always curable.—*Revue Médicale*, Nov. 1848.

---

14. *On Spinal Meningitis.*—M. Piorry, in a recent clinical lecture at the Hôpital de la Pitié, called attention to an epidemic of spinal meningitis, in some respects similar to that observed at Strasbourg by MM. Forget and Tourdes. By these authors this disease was observed to prevail chiefly among soldiers, and that class of people who were congregated together in large numbers in the same localities.

M. Piorry had been called to Corbeil by Dr. Liounet for the purpose of visiting certain patients then convalescent from spinal meningitis. The epidemic had prevailed in the country in the immediate neighbourhood of Corbeil, and in Corbeil itself. The patients observed by M. Liounet, manifested as symptoms, intense headache, a sense of prickling and of pain in the limbs. Percussion in the course of the spine caused much pain. Convulsions, coma, diminution of power, and sometimes paralysis of the extremities, were also symptoms of the disease observed by M. Liounet. Frequent autopsies demonstrated the existence of pus effused between the archnoid and pia mater in the cervical region. The encephalon presented no particular morbid appearance. In his lecture, M. Piorry related the particulars of four cases, three of which terminated favourably, the fourth fatally; of these we select the first.

1. A young man aged twenty-two, retained as a prisoner in the Bastion since the insurrection of June. This patient presented the following symptoms: Pain in the neck, extreme rigidity of that part; convulsive movements of the arms; the fingers and toes were rigid and semiflexed; the maintenance of the erect position almost impossible. He complained of excessive pain in the neck and back, augmented by percussion; the sense of pain was more severe at night than during the day. There existed an evident tendency to stupor; the spleen was enlarged. M. Piorry diagnosed spinal meningitis. The treatment adopted was the application of forty leeches to the neck, blisters along the spine, and the exhibition of the sulphate of quinine. On the following day the patient was slightly better, leeches were again applied, and a purgative injection administered. During many days little sensible improvement took place. At the visit of one day, he was found in a much worse condition than on his first admission. Leeches and blisters were again had recourse to; at length convalescence was established, and ultimately a complete cure obtained.

In the examination of the body in the fatal case alluded to, the patches of Peyer in the lower part of the small intestines were congested, the last two or three exhibited superficial ulcerations. The spleen was enlarged; the brain presented nothing remarkable; the surface of the cerebellum was slightly softened at the side of the medulla, in the cervical region; concrete pus was found effused between the archnoid and pia mater, forming a false membrane. At the inferior part of the spine, also between the archnoid and pia mater, there existed from three to four spoonfuls of liquid pus. The substance of the cord was not softened.

In the fatal case above recorded, and in two of the others, the symptoms were in most points similar to those of the typhoid fever of France; and in the above instance post-mortem examination also revealed similar lesions of the abdomen. In one case of the four, however, no typhoid symptoms were present, and there was none of the extension of the splenic dulness, loading of the colon with the air and fluid, which characterize, according to M. Piorry, the affection in question (the abdominal typhus of the Germans). Typhoid eruption (*taches septicémiques*) was present in two cases, and absent in two. The symptoms referrible to the spine were the same in all the cases.

From the observations which M. Piorry himself was enabled to make, as well as from those published in regard to the cerebro-spinal meningitis by MM. Faure-Villar, at Versailles, in 1839, Chauffral at Avignon, Tourdes and Forget at Strasbourg, he concludes that the exciting cause of spinal meningitis, is to be found in the over-crowding of prisons, bastions, &c., and that the agent of its production is an unknown poison, such a poison as is believed to exist in the case of cholera and other diseases of the same kind. M. Piorry attaches considerable importance to the power of energetic treatment when employed early in the disease, in being capable of preventing a fatal termination.—*Monthly Retrospect*, April 1849, from *Gazette des Hôpitaux*, March 8, 1849.

---

15. *Causes and Morbid Anatomy of Mental Diseases.*—Dr. John Webster, in an extremely interesting and valuable communication to the *Royal Medical and Chirurgical Society* (May 8), stated, in illustration of the comparative frequency of madness in the two sexes, that out of 1798 lunatics admitted into Bethlem Hospital, during six years, ending the 31st of December last, 1094 were females, and only 704 male patients. He next alluded to the causes apparently producing insanity, which he divided into moral and physical, besides hereditary tendency to mental disease. Of the male lunatics, nearly one half, or 346, became mad from moral causes; whilst the proportion of females was not quite so considerable, being 489 of the entire number. By physical causes, less than one-fourth of the male lunatics, or 156, became insane; whereas, amongst the female patients, the proportion was rather larger, being 282. Hence, speaking generally, moral causes produced half the total cases; but physical causes only one-fourth. The principal moral influence which occasioned insanity amongst males, was reverse of fortune, whereby 86 examples are recorded. Next, anxiety, which furnished 69 instances; then religion, giving 45 cases; lastly, love, which caused the loss of reason in 18 men. Amongst female lunatics, anxiety was the most frequent moral cause, producing 79 instances out of the 489 patients classed under the above category; whilst 69 cases arose from religion; 62 from the loss of relatives; and 57 from the more powerful influence of Cupid's tender passion upon the susceptible feelings of women. Fright caused insanity in 50 cases; reverse of fortune in 49; whereas, amongst men, as already stated, the same cause produced nearly treble that amount, speaking comparatively. In regard to physical causes, of the 156 male lunatics so affected, 80 originated from intemperance; and of the 282 female lunatics, similarly classified, 117 arose from puerperal disease. Other physical causes were subsequently mentioned by the author, before passing to the examination of hereditary tendency to mental complaints. Of 704 male lunatics previously enumerated, 219, or 31.10 per cent., had hereditary tendency to mania; but of the 1094 female insane patients, the proportion was larger—namely, 390, or 37.47 per cent. The author, amongst other remarks respecting the influence of hereditary tendency in producing mental disease, said, such an important fact, wherever it exists, should be always well considered by parties forming matrimonial engagements; especially, when both families are unfortunately so tainted. He next adverted to the age at which insanity is most likely to supervene. In males, he stated the most susceptible time of life was from 30 to 40; but in females it was earlier, being from 20 to 30. The author subsequently noticed the two sections of psychological physicians now dividing the profes-

sion—namely, the "vitalists" and the "anatomists," of which latter body he is himself a disciple, since he considers their doctrine the most rational, and in a greater degree consistent with the present advanced state of pathological knowledge respecting mental diseases. The author afterwards gave a synopsis of sixty-seven dissections made at Bethlem Hospital, of which the following is a summary of the diseased appearances observed in the brain and membranes. In 53 cases, effusion of water had taken place in the ventricles; in 53 cases, also, there was infiltration of the pia mater; in 38, turgidity of the cerebral blood-vessels; in 30, the archnoid membrane was thickened and opaque; in 26, the colour of the brain was altered from its natural tint; in 15, there was an effusion of blood within the skull, besides other alterations of structure, as mentioned by the author. The organs of the chest were likewise more or less diseased in as many as 62 of the patients; whilst in 30, morbid changes were likewise noticed in the abdominal viscera; so much so, indeed, was this the case, that the immediate cause of death, in a number of the insane patients referred to in the present communication, was apparently disease in these parts; but more especially, affections of the organs of respiration. Dr. Webster then alluded to the long period during which some of the lunatics had laboured under mental aberration, particularly females, one female lunatic having constantly resided in the incurable ward at Bethlem Hospital for upwards of half a century, or actually fifty-four years; thereby showing, that the loss of reason is sometimes not incompatible with longevity. After again referring to the deductions contained in his previous papers communicated to the Society, the author concluded by remarking, that the facts and statements now brought forward, fully confirmed his former observations, and he hoped they might prove useful to students of medical psychology.—*Lancet,* May 19, 1849.

16. *On Polydipsia.*—M. VIGLA took the occasion of an example of this rare form of disease being in the Hôtel-Dieu to deliver a clinical lecture upon it. It occurred in the person of a shoemaker, æt. 40, who, two months before admission, suffered from severe frontal neuralgia. Shortly before he came in, he was seized with so tormenting a thirst, that he was forced to drink six or seven quarts of water a day, and two or three by night. This state continued for three weeks, during which the neuralgia entirely left him; but a week prior to admission the thirst diminished and the neuralgia returned. Blisters to the head and purgatives relieved this; but the thirst now returned as intensely as ever. On the 2d of November, he was found to have passed from eight to ten pints of urine since the prior evening, which was of a very pale citron hue, inodorous, nearly neutral, and of a density (1002) but little above that of water, &c. The tongue was nearly normal, the gums pale, mouth dry, and spitting difficult, saliva slightly acid, and so sparing that he could not swallow two mouthfuls without drinking; appetite gone, having some desire for vegetable food, and a loathing for animal. No pain in the abdomen, and stools are normal. Skin dry, and very susceptible to cold. Some emaciation; little sleep; suspension of sexual desires; pulse 56, and regular.

There are three diseases in which excessive thirst and secretion of urine are prominent symptoms; polydipsia, diabetes mellitus, and diabetes insipidus. *Polydipsia* is distinguished from *diabetes mellitus* by there being no sugar in the urine, and mere congestion or augmentation of volume of the kidney, but no organic change. Although the odour of diabetic urine is slight, it is of a more animalized nature than that of polydipsia; and if the latter be left to itself, it passes into the putrefactive fermentation, while that of diabetes passes into the alcoholic, depositing a whitish substance, which is a true ferment. The difference of *density* sufficiently distinguishes the two urines; for while that of diabetes furnishes a specific gravity of from 1026 to 1044, that of polydipsia furnishes one of but from 1000 to 1004, or at most 1008; the density in the one affection being greater, in the other less, than in any other disease, and forming the two extremes of the scale. The urine of diabetes polarizes light, which that of polydipsia does not. In diabetes, the appetite may be much increased, while in polydipsia it is diminished; meat and gelatinous aliment are taken and digested in the former, vegetables in the latter. Nutrition is much more seriously affected in diabetes than in polydipsia; the continual emaciation, in spite of enormous alimentation, observed in the one, not taking place in the other. The diabetic patient easily takes cold, each cold becoming more and more obstinate, and usually terminating in phthisis. All those patients who do not die of a complication of the original disease, die tuberculous, a termination not observed in polydipsia. Arrived at such a period, the diabetes may seem cured; but in fact less sugar is secreted, because the patient now takes less food whence to elaborate it. Towards the end of the case the patient becomes œdematous, which he does not in polydipsia. Polydipsia does not easily make ravages in the constitution, the patient bearing it as well for twenty years as for six months, which is very far from being the case with diabetes. In both affections, the complication of a febrile disease may temporarily suspend their course. In one case, seen by M. Vigla, the polydipsia was suspended during an intense reaction excited by blisters, and reappeared when this had subsided.

As to *diabetes insipidus*, M. Vigla is aware of no well-ascertained example of such a disease, which, without sugar in the urine, gives rise to emaciation and eventual phthisis.

The *causes* of polydipsia are unknown. It may occur at any age, in any climate, and in either sex. Generally, its access is sudden, and it becomes fully developed in a few days. M. Vigla regards both it and bulimia as *neuroses*, deranging the health no more, or even less, than other neuroses. It obstinately resists all treatment; the only remedies which are of any occasional avail being antispasmodics.—*Brit. and For. Med.-Chir. Rev.*, April 1849, from *Gazette des Hôpitaux*, 1848, No. 130.

---

17. *Effects of Cauterization in Inoculation with Virulent Poisonous Agents.*—M. Parchappe, in a communication to the *French Academy of Medicine* (Jan 8.), expressed his regret that the confidence of medical men in this remedy had been shaken, especially in cases of the bite of a mad dog. He related the following experiments: 1. A quantity of extract of nux vomica, of the size of a pea, was introduced into a wound on the back of a young dog, and produced death in two hours. 2. A similar quantity was introduced into a wound in the foot. The limb was amputated. After twelve minutes, tetanus was complete, but was followed by recovery. 3. A wound in the foot, inoculated as above, was cauterized with a red hot iron. The result was recovery.

From these experiments it appears that the effect of nux vomica can be arrested by amputation, or destruction of the poisoned part. Now, as it appears that the virus of rabies requires a longer time to produce its effects than strychnia, the success of cauterization, in strychnia cases, should encourage us to practice it, to prevent absorption of the virus, from the bite of a mad dog.—*London Journ. Med.*, March 1849.

---

18. *Period required for the Absorption of Virus.*—M. Renault has communicated to the French Academy of Sciences the results of some experiments made at the Veterinary School of Alfort, the object of which was the determination of the period at which the *action of a virus ceases to be local, and becomes general.*

This was endeavoured to be determined by ascertaining how soon a parcel of virus placed under the epidermis becomes absorbed; or, in other words, how long is the period after inoculation within which we may destroy or remove the portion of skin under which such deposition has been made, without modifying the absorption of the virus, so as to prevent or sensibly modify the general effects. In thirteen experiments, the animals were inoculated with the matter of acute glanders, and the actual cautery applied, after previous excision of the congested parts, at periods after the inoculation varying in the different animals from ninety-six hours to one hour. In all, the animals became diseased. In another series of experiments, in which the virus of the rot of sheep was employed, it resulted that the virus was absorbed in five minutes.—*Brit. & For. Med.-Chir. Rev.*, April 1849, from *Gazette Médicale*, Dec. 16th, 1848.

19. *On the Simultaneous Development of Variola and Vaccinia.* By MM. Herard and Bousquet.—M. Herard having had, at the Children's Hospital at Paris (where children are so wantonly exposed to the danger of contracting small-pox prior to their vaccination), the opportunity of observing eighteen cases of the co-existence of the two diseases, he is desirous of expressing his opinion upon the disputed question as to the degree of influence they exert upon each other.

Of these eighteen children (from twenty months to four years old) seven died; all these being, however, cachectic, or exhausted by prior disease. In them, the small-pox was rarely confluent, but it was irregular and ill developed. In the eleven cases which recovered, the eruption was discrete, rapid in its course, and unaccompanied by suppuration of the pustules, or tumefaction of the surrounding skin. The fever was slight, and the convalescence rapid. During this benign progress of these cases, the disease more than once proved very fatal to non-vaccinated children. Had the vaccine acted injuriously in the seven children who died? MM. Rilliet, Barthez, and Legendre answer this question in the affirmative, believing the vaccination hastens the evolution of the variola, and increases the debility—opinions with which M. Herard does not agree. He also, in the eleven successful cases, observed no difference produced in the mode of the development of the vaccine vesicle; but in the seven children who died from various complications the vaccine was in a very languishing condition. The following are the general conclusions arrived at: 1. When the two eruptions are developed at the same time in a healthy child, the variola is advantageously modified. Its progress is more rapid, and the eruption is more discrete—taking on the character of varioloid. 2. Although vaccination is far from exerting the same effect, and especially in hospitals, on very young and diseased children, being innocent, it should be practiced. The danger in these cases is attributable to the small-pox, not to the vaccination, and is produced by complications and bad hygienic conditions. 3. It is not correct to say that the two eruptions exert a reciprocal modification. That which has the priority of invasion (not of infection) influences the other, but is not influenced by it; and as, in almost all cases, the vaccine, to become developed, must precede the variola, we may generally state that, in the cases where the diseases exist simultaneously, the vaccinia undergoes no modification.—*L'Union Médicale*, Nos. 108, 109, 110.

M. Bousquet states that an attentive examination of the voluminous correspondence of the Académie reveals the greatest discrepancy of opinion upon this subject. For his own part, he denies that vaccinia modifies the progress of small-pox advantageously; and considers it a false deduction to suppose that, because vaccinia prevents variola, it must restrain its advantages when the two diseases meet together. According to MM. Rayer and Clerault's statistics, of one hundred and eleven cases of simultaneous existence of the two diseases, twelve died, and M. Legendre states that nine of fifty-six died; but small-pox, unaided by vaccination, is not more fatal than this. Of M. Herard's eighteen cases, seven died, and there is no reason to agree with him that the remaining eleven were milder because of the vaccinia. MM. Rilliet and Barthez declare that in very young infants it increases danger; but M. Bousquet agrees with neither party. Those who maintain that small-pox is rendered more discrete by vaccination, take only the successful cases, forgetting that, in the natural small-pox, the discrete exceed the confluent cases in the proportion of ten to one.

M. Bousquet therefore denies that the two eruptions exert any reciprocal reaction; and the nearer they appear together, the more independent are they of each other. Suppose, e. g., that the two could appear at the same hour; then each would pursue its ordinary course, just as if the other were not present. But supposing the one eruption appears after the other, all will depend upon the space of time separating them. If this be only some hours, or even two or three days, all passes on as just stated. The case is different, when one of these eruptions is greatly in advance of the other. If this is not to such an extent to exclude, the eruptions progress together, but not in parallel. The most advanced always keeps its advantage, and finishes at its ordinary epoch, without having undergone any change in form or duration. The other follows it at a distance; but after the variolous capacity of the subject has become exhausted by the first, the second dies away. In these influences there is nothing direct, active, or special; they are the consequences of the faculty possessed by the eruptions of supplying or substituting each other. The vaccinia does not arrest the variola, but it is the variola that stops short in the face of the vaccinia; and, conversely, variola does not cut short the course of vaccinia, but this last interrupts its own course in presence of the variola. It is the right of precedence; and the more widely the two eruptions are separated, the more readily do they exclude each other; while the nearer they are together, the more independently do they proceed. Considered in themselves, the vaccine and variolous virus are so little capable of destroying each other's energy, that if they are mixed together, and inoculation performed with the mixture, two perfectly distinct eruptions are produced. Considered as regards their effects, we cannot say that vaccinia *cures* variola, or even, rigorously speaking, that it *prevents* it. It takes its place, stands in its stead, and is neither more nor less than a substitution. Thus, so far from explaining the operation of vaccinia by the supposed opposition it offers to variola, we would rather do so by the analogy and reciprocal action of the two diseases.—*Brit. & For. Med.-Chir. Rev.*, April 1849, from *Bulletin de Thérapeutique*, tom. xxv. pp. 342-52.

20. *On the Influence of Physical Agents in Variola.* By M. Serres.—The skin is pre-eminently the seat of the variolous eruption, not so much on account of its structure as its external position, and consequent exposure to the action of the air. Thus, those portions of the skin which, by the hair covering them, are somewhat protected from this influence, are those least affected by pustules. And if portions of the internal organs, naturally protected from the influence of the air, become exposed to this, no matter what their structure or functions may be, they also become covered with the pustules. Thus, in the same child, we may see the pharynx, epiglottis, and sometimes the trachea, exhibiting pustules, while the œsophagus is quite free. In trichiasis, in protrusion of the rectum, in protrusion of the vagina or uterus, the internal surface, now placed in the same condition as the external, furnishes pustules like it. It is to the exclusion of the air that the ectrotic mode of treating small-pox owes its success.

Seeing that the atmosphere produces so manifest an effect on the development of the pustules, we should expect that changes in its condition would not be without their influence. And thus it is, when we examine into the causes of the mortality of the disease prior to vaccination, we find that *inordinate dryness* of the air was one of the conditions most favorable to its aggravation, and this whether it co-existed with an excess of cold or heat. So, too, the history of the epidemics of this disease shows that they have always proved more fatal in the dry south, than in the more humid north. During 1817-19, M. Serres' small-pox patients were placed in small, ill-ventilated wards, which were also damp; but the cases of confluent small-pox manifested little severity. When, however, these wards were abandoned for spacious ones situated on the fourth story, very dry, and looking north and south, being very hot in summer, and very cold in winter, the mortality became so much greater, as to lead to the speedy resumption of the old, damp wards on the ground floor.

Does the same observation apply to vaccinia; and is this why revaccination has been so much more successful in the north than in the south?—*Brit. and For. Med.-Chir. Rev.*, from *Gazette Médicale de Paris*, 1848, No. 41.

21. *Nux Vomica in Intestinal Obstructions.*—It is notorious that certain obstinate cases of intestinal obstruction owe their difficulty to our ignorance of their cause; equally notorious that our practice is often empirical. In the "Transactions of the Medical Society of Rouliers," Dr. Ossieur has communicated some valuable information concerning the use of nux vomica in such cases. He says it produces a degree of excitement, more or less energetic, where there is deficient intestinal innervation, which often restores them to their natural action. Assuming this—and the fact is undisputed—we cannot refuse our assent to the doctrine that the medicine may act upon the muscular fibres of the intestines as it does on the muscles generally. In support of this

view, Dr. Ossieur refers to the action of nux vomica in chronic catarrh, with relaxation of the mucous membrane, to lead colic, to prolapsus ani in children, and to atonic diarrhœa. He relates two cases of obstinate constipation, which, resisting all other means, yielded at once to the nux vomica.—*Medical Times*, May 26, 1849.

---

22. *Extractum Cotyledonis Umbilici in Epilepsy.*—Dr. Joseph Bullar, of Southampton, recommends (*Provincial Med. and Surg. Journ.*, May 23, 1849) the use of the extractum cotyledonis umbilici, for the cure of epilepsy. "Several years ago," he states, "the expressed juice of the cotyledon umbilicus, or napplewort, was recommended to a lady who had compound epilepsy, which had not yielded to medical treatment, and under its use the disease was entirely removed and has not returned. The patient was under the care of my friend Mr. Salter, of Poole, who watched the case with much interest, and mentioned the fact to me. Subsequently, my brother, Dr. W. Bullar, recommended the juice for a child in this neighbourhood, where the plant grew, and the epilepsy was cured. Rather more than a year ago I requested Mr. Randall, chemist, of Southampton, to prepare an extract of the expressed juice, in order to give the remedy a trial, and from the experience I have since had, I have no doubt in my own mind of the anti-epileptic power of the medicine, although sufficient time has not yet passed to bring forward cases as perfect cures.

"From the experience Dr. B. has had in a considerable number of cases (several of which were of a very hopeless kind), long perseverance, he says, is necessary; and if the number and violence of the fits are lessened, there are good grounds for hope and further perseverance. In all the cases, there has been a marked diminution in the violence and frequency of the attacks; and as, in two cases (one of which I heard to-day), it has first increased the violence of the fit, and as, in others, there have been transient symptoms of increased nervousness and headache, requiring a short suspension, I am in hopes that it may prove a true anti-epileptic. It is certainly in many cases nervo-tonic, as the improved nervous tone is shown by quieter sleep, fewer dreams, better spirits, more ability to take exercise, and a consciousness of general improvement. It has no other action on the body that I am aware of. It certainly produces no action on the bowels, for when there has been costiveness (which is so commonly the case in epileptics) the usual medicines to keep up a natural action have been required. I have used it with the precautions quinine requires in ague, attending to the general health, and endeavouring to remove and rectify faulty secretions, or any obvious local disorder. Some of the patients to whom I have given it have been in fair bodily health; in others the nervous system has been weak and excitable; in others weak and exhausted. In children, it is advisable to begin with a few brisk purgatives, in case the epilepsy may depend on worms; and in young men, the state of the urethra should be examined; as that state of debility kept up by seminal discharges, consequent on an irritable urethra, which so disposes the system to epilepsy, counteracts the beneficial influence of the medicine. If there is habitual costiveness, a simple dinner pill (as the compound rhubarb) is necessary. When, with an excitable nervous system, there is a foul tongue, yellowish eye, turbid, acid urine, and offensive motions, the state of the blood on which this depends must be corrected by a course of aperients, which excite the gastro-intestinal mucous membrane, liver, and kidneys to throw off the impurities, without weakening the general powers (aided by diet and hygienic means); for, unless the fluids are thus filtered and purified, no specific remedy can with any reason be expected to have a fair chance.

"The juice is prepared by bruising the leaves and leaf-stalks in a mortar, and expressing the juice from the bruised mass through a cloth. One teaspoonful, twice a day, of the juice. I have prescribed five grains of the extract (which is made by evaporating this juice), twice a day, and occasionally three times. It may happen, that the disease may be much shortened by increasing the dose. This is matter for further trial."

SURGICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL SURGERY.

23. *Pathology and Treatment of the Deafness attendant upon Old Age.*—Mr. Joseph Toynbee, in a very important paper contributed to the *Monthly Journal of Med. Science* (Feb. 1849), contends that the conclusion to which most medical men have arrived, that senile deafness depends upon a gradual and natural decay of the powers of the organ of hearing, is not well founded. He states, that "the results of his experience tend to show, that this decline of the power of hearing, in old age, is dependent upon the influences to which aged persons are frequently subjected; namely, the prolonged stay in warm and close rooms, the avoidance of the open air, the cessation from bodily exertion, the want of attention to diet, and to the healthy performance of the functions of the skin; and that it does not depend upon the decline of nervous power, or upon an atrophy of the tissues which compose the organ of hearing. On the contrary, an extensive field of *post-mortem* investigation has demonstrated, that the *most frequent* pathological condition found in cases of senile deafness, is a considerable increase in the substance of the mucous membrane lining the tympanic cavities; and that the evidences of atrophy of the tissues are very rare. The pathological condition *second* in frequency in these cases, is a thickening of the *membrana tympani;* and the *third* consists in the presence of bands of adhesions, which connect together various parts contained in the tympanic cavity and these contents to the walls of the tympanum. The examination, during life, of elderly patients suffering from deafness, quite agrees with the results of the pathological researches. Thus, while the external surface of the membrana tympani remains smooth and shining, its substance is seen to be whiter than natural; upon attempting a forcible expiration with closed nostrils, air is heard by the otoscope* to enter the tympanic cavity, but it produces an unnatural sound: the hearing is generally worse during an attack of cold, and in dull weather."

Mr. Toynbee relates five cases, with dissections, illustrative of these views.

24. *Traumatic Pleuro-pneumonia.*—Traumatic lesions of the lungs are far from being invariably fatal. Thus we frequently meet with very serious cases, accompanied by circumstances against which it would, at first sight, seem difficult for the patient to struggle, which are ultimately cured without leaving any trace.

One of the *gardes mobiles*, a man about thirty years of age, was wounded in the chest by a ball which lodged in the lungs. A few days after his entrance into the hospital, he expectorated purulent mucus, mixed with blood; there was fever, accompanied by all the symptoms of inflammation of the parenchyma of the lungs. At this time, the patient was on nearly full diet, but had no wine allowed him. M. Malgaigne having made inquiries regarding the circumstances from which this attack arose, discovered that, one or two evenings before the expectoration came on, the man had drunk a bottle of wine which had been conveyed to him by his friends. An abscess soon appeared at the portion of the lungs where the ball had lodged, and broke into the bronchi, after which the patient expectorated pure pus.

The condition of the patient became so serious that M. Malgaigne, on one occasion, thought his case utterly hopeless. He was in a state of the most complete prostration. The pus had forced for itself a passage into the pleura, where a purulent effusion was formed, which escaped both by expectoration and through the wound in the chest. Notwithstanding the serious nature of these circumstances, the patient recovered, and was dismissed from the hospital when in a very satisfactory state; although not kept till his complete recovery, owing to the discovery that, in addition to the wine allowed by the hospital regulations, the patient, notwithstanding M. Malgaigne's injunctions to the contrary, continued to drink wine surreptitiously conveyed to him from without.

---

* An elastic tube, twenty inches in length, each extremity having fixed upon it a piece of ivory or ebony: one orifice is introduced into the ear of the surgeon, and the other into that of the patient, while the latter attempts to make a forcible expiration with closed mouth and nostrils.

In reference to this case, M. Malgaigne took occasion to point out that it was one of those cases which show the admirable results that may be expected from a sound constitution, and keeping the patient on a good diet. For how can the system bear up against the debility which necessarily results from continual suppuration, if the diet be low? Attention is often so exclusively directed towards the organic condition of the organs, that the vital condition is too often lost sight of, although it is equally worthy of observation. It is generally supposed that where there is inflammation of the lungs the patient must be kept low, but M. Malgaigne observes, here, that we should look to the state of the stomach, which is to be discovered, not by percussion or palpation, but by the manner in which that organ performs its functions. If it performs its functions in a perfectly normal manner, M. Malgaigne is of opinion that the patient will invariably be benefited by a good diet, however serious the wounds may appear to be.

However much we may agree with the opinions of M. Malgaigne, on the subject of the diet to be given to the wounded, it must not be forgotten that, generally speaking, traumatic inflammations of the lungs are less severe, and less often fatal, than idiopathic inflammations, a circumstance that may not have been wholly devoid of influence here.—*Monthly Retrospect*, April 1849, from *Gazette des Hôpitaux*, 1848.

---

25. *On the Utility and Necessity of performing Paracentesis Thoracis in certain cases of Pneumothorax.* By Hamilton Roe, M. D. (*Proceedings of Royal Med. and Chirurg. Soc.*, April 10, 1849).—The object of this paper is to show that pneumothorax is not a necessarily fatal disease, and that paracentesis is the best remedy which can be employed for its cure. The author adverts to the fact, that the disease arises from a great variety of causes, and that not unfrequently there is either no alteration of structure in the lungs, or so little as to warrant us in supposing that it might be cured. He relates two fatal cases that have come under his own observation, in which paracentesis was recommended by him, but not performed, and in which, after death, it was found that there was in one instance no perforation of the lung, and no disease of the lung whatever; while in the other the opening in the pleura was very small, and although four small caverns and a small number of tubercles of inconsiderable size existed in it, there was no organic disease immediately fatal, and life might have been at least prolonged, had the lung been relieved from the pressure of the air in the pleura by the operation of paracentesis. The author then refers to several other writers, who have narrated similar cases, and especially to the thesis of M. Saussier, who has shown that the possible causes of pneumothorax are seventeen. The author himself arranges the varieties of cases under four heads: 1. Those where the air is secreted by the pleura; 2, those where it arises from decomposition of fluid; 3, the cases where it escapes from a distended or ruptured emphysematous cell; and 4, those where it issues from a fissure in the lung. The first three varieties are susceptible of cure, and the fourth is not necessarily fatal. After describing the symptoms distinguishing these different varieties of the disease, the author proceeds to show that the mere presence of air in the pleura is not a source of danger; that the air may in some cases be absorbed; and that it is, therefore, only where air is accumulated in such quantity as to cause great difficulty of breathing, that we are called on to remove it by tapping the chest. The operation, in order to be successful, ought to be performed before the lung, by compression, has become carnified, and the other lung congested. The objection, that the air admitted from without will itself compress the lung, the author meets by saying, "that if the wound made by the canula in tapping be kept open, the lung, if healthy, will expand on being relieved from pressure, and may, if the air can escape as fast as it enters, not only come into contact with the costal pleura, but contract adhesions to it, and obliterate the pleural cavity." In support of this statement, he gives the particulars of a case observed and related by Mr. Benjamin Phillips, in which, by sloughing of the soft parts, the cavity of the pleura was

completely laid open, in two intercostal spaces, to the extent of several inches, and where, "at every act of ordinary inspiration, the lung came into close contact with the ribs; at every expiration, the lung retreated to the extent of half an inch from the ribs." The author then refers to published reports of nineteen cases, in which paracentesis thoracis has been performed for pneumothorax, in ten cases successfully; and after observing that the question, whether the opening made in the operation should be closed or kept open is yet to be decided, but that it seems to him desirable to keep it open when the air enters the pleura through an opening in the lung, and to close it in the other cases, he concludes his paper by relating a case in which the wound was left open with a favourable result.—*London Medical Gazette*, April 27, 1849.

---

26. *Use of Nitrate of Silver for White Swellings, Hydrarthrosis, and Venereal Bubo.*—M. Decaisne, military surgeon at Anvers, has published, in the *Archives de Médecine Militaire*, some observations on this subject; two remarkable cases are given. One of the patients was a man of 27 years of age, and of a lymphatic temperament, who, on the night of the 5th of February, 1847, felt a severe pain in the right knee; swelling soon followed, and the patient was unable to use the limb. Every means were had recourse to for his relief—antiphlogistics, baths, calomel and opium, blisters, iodine, mercurial ointment, compression and douches, without any effect in arresting its progress into regular white-swelling. In the month of July, M. Decaisne began the use of an ointment of nitrate of silver, when the knee was double its natural size, was so tender that the patient dreaded its being touched, all motion in the joint impossible, and with three fistulous openings at the inner side of the joint; amputation appeared inevitable; and in this very unfavourable aspect of affairs, it was ordered to employ friction twice a day of an ointment composed of one *gros* (59.1 grains) of the salt of silver to an ounce of lard; about two *gros* of the ointment were used at each application. Under this treatment the pain sensibly abated in a few days, the swelling gradually diminished, and in about a month the improvement, in every respect, was considerable. During the month of August, the proportion of the nitrate of silver to the lard was increased to a *gros* and a half or two *gros* to the ounce of lard, and at length, at the end of the month, the cure was complete, and the young man only experienced a slight stiffness in bending the knee. The second case was that of a young boy, attacked with a white-swelling of the radio-carpal articulation. Previously to the employment of the ointment of the nitrate of silver in this case, a number of more active remedies had been tried in vain; the swelling was considerable, and it was necessary to open a large abscess near the articulation. After using the ointment of the nitrate of silver for two months the amelioration was considerable, or rather the cure was completed.

After giving the above cases, the *Journal de Médecine* adds the following remarks: Other cases, where the salt of silver in the form of ointment have been recently published in the *Archives de la Médecine Belge*, by Professor Uytterhoeven; he used it in a great number of cases, but all those he details were dropsy of joints, not white-swelling: the ointment of nitrate of silver possesses a resolutive action upon those serous swellings of joints. This therapeutic agent should not be employed until the inflammatory stage has passed.

In making the ointment it is necessary to dissolve the nitrate of silver in water before incorporating it with the lard, to prevent the rubefacient or cauterizing effect of the metallic salt on the skin, or the formation of vesicles, which without this precaution would be inevitable. Generally smart pain, but transient, is experienced on the application of this remedy at the place on which it is rubbed.

The power of this ointment to resolve venereal buboes has been experienced in the practice of M. Lutens; he dissolved a drachm of the salt in a sufficient quantity of distilled water, and then mixed it with an ounce of lard. His mode of using it is this,—about two drachms of the ointment are used at each rubbing; after three or four days the skin becomes black and shining; instead of suspending the treatment until the epidermis desquamates fully, the scales are detached with the nail, or a spatula, and the frictions immediately recommenced. These frictions never occasion pain, but sometimes a slight uneasiness. M. Lutens uses this ointment also in glandular swellings of the neck and groin, and in all stages of bubo.—*Dub. Med. Press*, March 1849.

---

27. *On Valvular Obstructions as a Cause of Retention of Urine.*—M. Mercier has written two papers in the *Gazette des Hôpitaux* (23d and 27th Jan.), on the remedial measures for retention of urine in old people. M. Mercier states that his researches have shown him that the cause of retention, in these cases, is what he terms valvular obstruction, which he divides into two kinds, muscular and prostatic; the former, he states, arises from the anatomical arrangement of the muscular fibres at the orifice of the bladder; presenting, even in their normal condition, a transverse elevation of the mucous membrane covering them; this, he states, increases to such an extent, in old people, as to present a true valvular obstruction; and, to remedy this cause of retention, he proposes incising the valvular elevation at several points by means of an instrument, of the form of the ordinary short-curved sound, used for exploring the bladder, and containing a small cutting blade which can be projected for the purpose of incising the valve, after the instrument used as an exploratory sound has ascertained its size and position. He states, that at first he tried excision of the projecting portion, but found this means uncertain, and that he now finds deep incising across the structure of the valve perfectly sufficient. If no accidents occur during the first few days, he applies no other treatment (nothing is said of what these accidents may be) except for the purpose of preventing hemorrhage, which has occasionally, though rarely, occurred; he recommends that the bladder should not be allowed to be empty, and therefore directs the use of injections of cold water; he finds the presence of the urine sufficient to prevent too rapid union of the incised edges.

By the term prostatic valvular obstruction is meant, the enlargement and projection of the middle lobe of the prostate. For the cure of this cause of retention, it is proposed to twist off or break down the projecting portion. This is effected by means of the lithotrite of M. Jacobson, which consists of two branches enclosed in a sheath; the branch corresponding to the convexity of the curve is formed of separate portions articulated together, so that when the blades are projected from the sheath the articulated branch forms a sort of noose; when the instrument is closed it presents the appearance and serves the purpose of an ordinary sound. For the operation at present in question, the instrument introduced closed, is used as a sound, and when the valvular projection of the prostate is felt by it, the instrument is opened, the blades are projected from the sheath, and the enlargement of the gland is seized in the noose, and then, by drawing back the blades within the sheath, the instrument is closed, and the valvular tumour either twisted off or broken up into fragments, [!] which become decomposed in the bladder and pass of with the urine. The only after treatment adopted is the injection of cold water into the bladder to prevent hemorrhage.

[M. Mercier says nothing of the use of anæsthetic agents in this operation. To the unfortunate subjects of valvular obstruction, who fall into M. M.'s hands, chloroform would be a real boon.]

It is also mentioned that M. Mequel d'Amboise has obtained favourable results in such cases, by the employment of a method at once ingenious and *very simple* [save the mark!] This simple measure consists in taking six small leaden pellets of a conical form, the base of each being about two-fifths of an inch in diameter, and to the apex of each is attached a long and delicate stalk of very flexible iron wire; these are introduced one by one into the bladder by means of a silver catheter open at both ends; and this being effected, the catheter is withdrawn. The operator then unites all the flexible iron wires which project at the orifice of the urethra, and by drawing them towards himself, he pulls all the leaden cones into a mass at the neck of the bladder; this he does with the intention of causing compression of the enlarged lobe of the prostate, but, according to Mr. Phillips, it would seem probable that the glandular projection is entangled amongst, and crushed and torn by, the forcible collection of the leaden cones. When the operation is completed, the cones are pushed back into the bladder, and then removed one by one by means of the attached wires. —*Monthly Retrospect*, April 1849.

---

28. *On the Evils attending Excision of the Tonsils.*—Mr. Harvey, in a paper read before the London Medical Society, stated that his attention had long been directed to the question how far chronic enlargement of the tonsils affected the permeability of the Eustachian tube. The result of the examination of nearly a hundred cases had convinced him that the bodies in question had really nothing to do, mechanically, with obstructing that tube. After giving an anatomical description of the tonsils, he proceeded to show that when they became enlarged, it was always downwards and forwards—that is, in the direction of the mouth and of the œsophagus; and that, consequently, the effect upon the mouth of the Eustachian tube was that of dilatation, and not, as had been supposed, of occlusion, to that orifice. The author next enumerated the causes of chronic enlargement of the tonsils, the chief of which were cold, catarrhal affections, deranged digestion, the eruptive fevers, &c. Aphthoid affections were a frequent source of disease in the middle ear. With respect to occlusion of the Eustachian passage, he considered it to exist much less frequently than had been supposed; and in cases where this occlusion did exist, it was not from the enlarged tonsils pressing upon the mouth of the tube, but from thickening, the result of inflammation of the lining membrane. Excision of the tonsils was not, therefore, expedient; indeed, in many cases which he had examined, that proceeding had been attended with enlargement of the follicles of the pharynx, continued heat and thirst, constant desire for deglutition, disturbance of the general health, and impairment of the voice. Enlarged tonsils were more frequently found in females than males; and when enlarged in childhood, generally assumed their natural size at puberty. They appeared to the author to have some intimate sympathy with the sexual organization. The treatment of enlargement of the tonsils consisted of small doses of the bichloride of mercury and colchicum; the latter, with guaiacum, was most efficacious. He concluded by remarking, that in some cases in which the tonsils had been removed, the hearing, previously intact, had become impaired. He illustrated his remarks with the relation of several cases.

In the discussion which ensued on this paper, it was observed, by Mr. Headland, that in all the cases he had seen, in which the tonsils had been excised in children, the patients had departed from their general health. For that reason he had long since discountenanced the operation.

Dr. Crisp thought the deafness in these cases was rather the result of congestion than of pressure. He considered that some connection existed between the tonsils and the generative organs. Tonsils enlarged in a similar way to other glandular organs, and were amenable to the same treatment.

Mr. Pilcher agreed with the author, that enlarged tonsils, *per se*, had little to do with the Eustachian passages; the irritation, however, produced by these organs when inflamed, would extend up the Eustachian tube, and deafness might be the result. Any remedies applied for the cure or relief of enlarged tonsils, he considered would be ineffective without the general health was attended to.

Mr. Harvey had always found that, when the general health was improved under the use of tonics and mineral acids, and the local application of iodine and other agents, the tonsils usually resumed their normal condition. When very large, occasional scarification was of great service.—*London. Med. Gaz.*, April 1849.

---

29. *Arterial Compression as an Antiphlogistic.*—Dr. Henroz de Marche has published a work on the value of compressing the brachial artery in cases of whitlow to check the inflammatory process in the finger; this seems but an exaggeration of M. Gerdy's principle of keeping the limb elevated so as to lessen the force of the arterial circulation in the inflamed part. Dr. Henroz was one day in his garden pruning an arbutus, and got a prick of a thorn in his left ring-finger at the inner side of the third phalanx; the thorn was extracted, and for twenty-four hours he felt no uneasiness in the part; the finger at this time

began to swell rapidly, and to grow red, and the inflammation extended by degrees to the palm and back of the hand. On the fourth day, the pain was pulsatile and severe; he could not sleep; had great thirst; skin hot, and pulse frequent; the axillary glands were swollen but indolent. Stuping, leeches, poultices, opiates, mercurial frictions, were in their turn tried without advantage. It then occurred to M. Henroz to try compression of the brachial artery, which he did immediately with his thumb; instantly, the severe pain which he had endured for five days ceased, as if by magic, and he was able, without the slightest uneasiness, to put his hand into any position he pleased, and even the redness disappeared completely. However, as it was impossible to maintain the pressure in this manner for any length of time, he contrived an instrument for the purpose, so simple in its construction as perhaps to make it a valuable aid in such cases in the country, where more perfect ones could not be readily had. It was applied on the brachial artery, and the same good effects immediately followed as when compression was made with the thumb; it was left on for three hours, during which the pain in the hand did not recur for an instant; it was pale and cool, and the swelling had diminished. Fearing that a longer interruption to the circulation might produce ill consequences, M. Henroz suspended the compression for three-quarters of an hour. The pain returned; pressure was again made, but this time it was on the ulnar not the brachial artery, and the symptoms were as suddenly relieved as in the former case. Compression on the artery was thus continued from half-past twelve at noon until five o'clock in the evening, as well as the palm and dorsum of the hand with firm compresses of wadding, at which time the tumefaction of the hand and finger was permanently reduced, as also the tenderness; the symptoms of reaction had ceased, and there were no longer pain or fever. In the evening, pressure was again made and continued all night; the next day the cure was complete.

The same treatment was employed by M. Henroz with the same result on a young girl who had a very severe whitlow; in this case, in which the affection was eight days progressing, the pain left the part the instant the compression was applied, and the cure was complete in thirty-six hours.—*Journal de Médecine.*

---

30. *Treatment of Gonorrhœa by Vinum Colchici.*—Dr. Ficimus, of Dresden, confirms the opinion formed by Eisenmann, of the value of vinum colchici in gonorrhœa. He gives from twenty-five to thirty drops three times a day, combined with tincture opii, enjoining at the same time a low diet, warm bath, &c. These means he has found attended with unprecedented success in the treatment of gonorrhœa, and other inflammatory discharges from the urethra in males and from the vagina and uterus in females. The details of ten cases are given in illustration.—*Med. Gaz.*, from *Casper's Wochenschrift*, Aug. 26, 1848.

---

31. *Case of Exfoliation of the Anterior Arch of the Atlas.* (Proceedings Royal Med. and Chirurg. Soc.) By Robert Wade, Esq.—The subject of this affection (aged thirty-five) first came under the author's notice at the Westminster Dispensary, in October, 1845. He then had a large, sloughy ulcer occupying the back of the pharynx, at the centre of which dead bone could be felt with a probe. He had previously suffered from extensive exfoliation of the upper jaw, and lost one of the spongy bones. Twelve years had elapsed since he had primary venereal disease, for which he was salivated, and was again subjected to the influence of mercury, by fumigations, for ulcerated throat. A course of iodide of potassium in sarsaparilla re-established his health for a time, but his throat again became sore two years afterwards. The same treatment was resorted to repeatedly with varying success. Latterly, he had suffered from pain in the neck, and from attacks of muscular rigidity in the same part. In one of these spasmodic attacks he had been alarmed by feeling something give way in the back of his neck, "with a loud crack, like the report of a pistol." On looking into the mouth, some coagulated blood was seen adhering to the ulcer. After this, the spasmodic attacks became less frequent and severe; and at the expiration of five months, the author observed a small portion of bone project-

ing into the pharynx, and, with very little difficulty, removed the greater part of the anterior arch of the atlas, with the entire articulating surface of the odontoid process of the axis. Caution was enjoined for a time, and the patient was enabled to resume his usual occupations in three months; the throat, however, has continued, from time to time, to be subject to attacks of ulceration. The power of rotating the head is now nearly perfect, but he has a catching pain at the back of the neck when he attempts to bend his head forwards.

Mr. PRESCOTT HEWETT brought forward two preparations, which had reference to the paper which had just been read. These preparations were presented to the pathological museum of St. George's Hospital, in 1835, by Mr. Keate, who removed them, in 1810, from a man who had been affected with syphilis, and had taken large quantities of mercury. One of these preparations was a large exfoliation from the anterior part of the atlas, on which might be detected a small portion of the articulating surface for the odontoid process. This portion was perfectly smooth, and of the size of a split pea; the remainder of the bone was rough, and consisted only of about two-thirds of the thickness of the anterior arch of this vertebra; it measured an inch in length. The other preparation, which was taken from the same patient, consisted of an entensive exfoliation from the basilar surface of the occipital, including the luxated edge of that bone. After the removal of these pieces of bone, as well as exfoliations from other parts, the patient recovered his former health and strength. The details of this case were published by Mr. Keate in the *Medical Gazette* for 1835.

Mr. WADE replied, in answer to a question from the president, that his patient retained, unimpaired, the power of rotating the head, but that it could only be bent forward to a very slight extent, not more than an inch. With regard to the case mentioned by Mr. Hewett, as having occurred at St. George's Hospital, in 1810, although, in some respects, resembling his own, there was this important difference, that in Mr. Hewett's there had been exfoliation of a part only of the anterior arch of the atlas, with but a portion of the articulating surface for the odontoid process; so that, in fact, some degree of bony support had still remained in front of that process. Mr. Wade believed that the case brought by him before the Society was the only one recorded in which exfoliation of the whole of the anterior arch of the atlas, with the entire articulating surface for the odontoid process of the axis, had occurred, affording a satisfactory proof that the transverse ligament has sufficient strength to retain that process in its place.—*Lancet,* Feb. 24.

32. *New Variety of Luxation of the Humerus.* By M. MALGAIGNE.—A man, æt. 63, presented himself to M. Malgaigne, 31st of October, with a luxation of the humerus, which had occurred on the 16th of the preceding August; and the subject being a thin one, he was enabled to convince himself that it was a variety of the accident of which he knew of no other example. The man had been pitched to a distance from the top of a high wagon on to the ground, and had fallen on his shoulder, the arm being at the same time compressed against the trunk. A careful examination showed that the head of the bone had been carried upwards and forwards above the acromio-coracoid ligament and the coracoid process, which was so concealed by the head of the bone as not to be felt. The exact seat of the head was on the acromio-coracoid ligament, anteriorly and superiorly to the coracoid process; so that it might be termed the *supra-coracoid* luxation of the humerus. It was irreducible at so remote a period.—*Brit. & For. Med.-Chir. Rev.,* from *Rev. Méd. Chir.,* tom. v. p. 30.

33. *Staphyloraphy.*—M. GERDY exhibited to the National Academy of Medicine a lad, fifteen years of age, on whom he had performed the operation of staphyloraphy, and whose pronunciation was entirely re-established. The cleft-palate in this patient, he stated, was so large, that the thumb could not cover the opening; there was no separation of the bone. Pronunciation was painful, and very imperfect. The fault of pronunciation was principally on the consonants, especially on the c, s, j, ch, n, b; in fact, the whole of the consonants were very much altered from the air escaping by the nostrils. The sounds were so very confused, that the person could hardly be understood. At present,

the patient is cured, with the exception of a very slight embarrassment, the results of previous habits of speaking: at the same time, the deglutition of fluid, formerly accompanied with difficulty, is now quite easy. M. Gerdy made use of the ordinary process of refreshing the edges; but in place of the interrupted suture, which he always thought bad, from its forming a ring, the pressure of which brought on sloughing of the part, he preferred the quilled suture, which forms only a half circle, and does not strangulate the approximated portions. Instead of quills, he used two small pieces of liquorice root, moistened in warm water; he removed the first thread on the 6th day, and the rest on the 7th. M. Gerdy attributed the success principally to the employment of the quilled suture, which he considers preferable to all others for this purpose.—*Monthly Retrospect*, from *Gaz. des Hopitaux*, Oct. 1848.

---

34. *Ligature of the External Iliac Artery.*—T. W. Nunn, Esq., has communicated to the *Lancet* (May 5) a case of femoral aneurism about the size of half a large orange, in a man 43 years of age. A ligature was applied to the external iliac, while the patient was under the influence of chloroform, Jan. 26th. The ligature came away on the 32d day (23d Feb.), and on the 23d March the patient resumed his employment. The temperature of the limb was well maintained throughout. On the evening after the operation, the thermometer indicated in the ham of the ligatured side a heat of 95°; while in the ham of the sound side, and in the axilla, a temperature of 92° only was attained. Indeed, many days after the operation, the right limb appeared to the hand to be the warmer of the two, though the thermometer did not verify the impression. I consider the chloroform to have been the cause of the troublesome cough mentioned, but fortunately produced no serious harm.

---

35. *Femoral Aneurism.* Mr. Tufnell communicated to the Surgical Society of Ireland (Feb. 17, 1849) the following extremely interesting case of femoral aneurism. The subject of it was an Irishman, a sergeant of infantry, aged 34, five feet ten inches in height, a strong and very healthy man, of temperate habits, and extreme moral courage. On the 10th of March 1848, whilst at drill, performing the extension motions, and endeavouring to touch the ground without bending the knees, he felt something snap in the fold of the left groin. He did not suffer pain or inconvenience, and made no report of the circumstance. The day but one following he marched a distance of eighteen Irish miles. His foot and leg swelled upon this occasion, and continued to do so for several days, when, finding the œdema so great as to prevent him from wearing his boot, he went into hospital, complaining of being foot-sore from the march. He rested in bed for a short time, and the swelling gradually subsided. He returned, therefore, to his duty, and continued at it for upwards of a week, when, being engaged in the escort of provisions, and finding himself unequal for the duty, he was readmitted into hospital, complaining of œdema and leg weariness as before. Rest in the recumbent position again relieved the swelling, and he reported himself as fit for his duty. He was accordingly a second time discharged, and was immediately sent (being a steady, intelligent man) on the recruiting service to England.

Here, during a period of several months, he performed every duty required of him. He stated that, shortly after leaving the regiment, the swelling of the leg became constant, and a small tumour gradually formed in the fold of the left thigh, which at first he could perceive in the night, when in bed, ticking like a clock, but that afterwards, as the swelling increased, the pulsation became indistinct. He never sought for medical relief, but was daily walking about, searching for recruits. This state of things continued until early in the month of October, when the pain in the thigh and leg (especially after standing for several hours), became so severe as to oblige him to apply for permission to return to his regiment. He was accordingly recalled, but on rejoining his corps, he made no further complaint, and continued to perform the ordinary duties of a sergeant until the 22d of December last. On that day he went to the hospital, and exhibited to the medical officer of his corps a large, pale tumour, situated at the fold of the left thigh, immediately below Poupart's ligament, and encroaching upwards upon the abdomen.

The emergency of the case was reported by the medical officer to Sir James Pitcairn, the inspector-general of hospitals, who immediately ordered a medical board to assemble and report upon the practicability of removing the man to Dublin, in order that he might have the advantage of treatment in the Royal Infirmary. The board having reported that he could be safely removed by short stages and under proper escort, he was accordingly ordered up, and arrived at the Military Hospital on the 20th of January, and was placed under Dr. Fox's care.

The aspect of the tumour at this time was frightful from its size, and bore somewhat the appearance of fungous hæmatodes. It rose in a sugar-loaf form from the centre of the left groin, measuring one foot eleven inches round the base, and eleven inches across the top. Its base was pink and slightly inflamed, its apex purple, with the skin considerably abraded, marking an incipient slough. Pulsation was visible by placing a piece of paper on the surface, or applying the hands to the sides of the tumour, whilst a distinct single bruit could be heard throughout. The tumour encroached greatly upon the abdomen, its upper border being level with the brim of the pelvis. The thigh was enormously swollen, being twice the size of the other; but the limb below was not correspondingly increased, the foot being only one inch and a-half, and the calf of the leg only three inches larger than that of the opposite side. The temperature was equal in both; the posterior tibial artery could not be felt on the affected side, but pulsation in the popliteal was doubtful.

To view this man lying in bed, no suspicion of such disease could have been entertained. His eye was clear and bright, his countenance placid, not in any way expressive of suffering, and he made no complaint. When questioned, he said that the pain, which had been severe during the journey, had subsided, and that he felt tolerably well. His tongue was moist; his pulse one hundred, regular, and soft; he had slept soundly the preceding night under the influence of an anodyne, and awoke free from headache; all that he complained of was, that his appetite was failing, and that he felt correspondingly weak.

A consultation on the case was held upon the 22d, Sir James Pitcairn, Staff-Surgeons Sinclair, Scott, and Fox, and Assistant-Surgeons Barrett and Ivey, with Sir Philip Crampton, Mr. Cusack, and Dr. Adams being present. It was unanimously determined, under the circumstances, not to interfere, unless compelled to do so by the sack giving way, but to leave the case to nature, in the hope that, as the pulsation was very indistinct and gradually declining, it might spontaneously cease, the artery be obliterated above, the sack become filled with coagula, and the aneurism eventually slough out; such a termination having twice occurred in somewhat similar cases in the practice of Sir Philip Crampton.

Cold lotions were ordered to be applied to the tumour, the patient's strength to be kept up by strong beef-tea, and rest to be procured by opium at night.

On the 23d, no change whatever had taken place.

On the 24th, he was not so well. He had perspired profusely through the night, the sweat having an acid, rheumatic odour. The tongue was dry, and he complained of thirst. The pulse was increased in frequency, being one hundred and twenty in the minute. Pain had returned in the tumour, which, he said, felt as if hot water were poured upon it. The pulsation was not perceptible, and the bruit could be distinguished only by applying the ear directly to the tumour: it was inaudible through the medium of a stethoscope. The surface of the tumour was more livid, and œdema slightly increased; but the temperature of the leg was natural and equal to that of the opposite limb.

The same treatment was ordered to be continued.

On the 25th there was an apparent improvement in his general condition, the pulse having come down to one hundred and eight, the tongue become moist, and the thirst less urgent. The pain in the tumour had subsided, and he complained only when the limb was stirred; but the tumour itself had increased in size, its surface being livid, indeed almost black, the skin abraded, and weeping sanguinous fluid sufficient to tinge the cloth by which the lotion was applied.

The discoloration of the surface extended over the brim of the pelvis, giving an ecchymosed appearance to the integuments down as low as the side of the nates. The temperature of the limb was unchanged.

During the course of this day, a bulging prominence presented itself to the outer edge of the tumour, having much the appearance of a knuckle of livid intestine. Drs. Fox and Barrett, who were in close attendance upon the patient, now determined to cut down through the centre of the tumour, and tie the vessel as it entered the sack, as soon as ever the first oozing of blood should appear.

Their opinion, indeed, was not to wait for the occurrence of this event, lest the jet of blood should be too great for the patient to bear, but to anticipate what now appeared to be almost inevitable. The general impression, however, upon the minds of the members of the consultation being, that, from the mass of coagulum then lying between the artery and the surface of the tumour, the vent would not be followed by violent hemorrhage, they were inclined to hold their hands, and give nature every chance, waiting ready to interfere as soon as all further hope was removed.

This event occurred at 6 P. M. The patient was in the act of moving the limb when the aneurism suddenly burst, the blood spouting in a heavy jet full three feet from the bed! Compression upon the aorta was instantly made by Dr. Barrett, whilst Dr. Fox, assisted by Dr. Ivey, carried a free incision through the centre of the tumour, (turning out the mass of clot and gore contained in the sac,) and quickly placing a ligature round the mouth of the artery as it entered the sac. No hemorrhage took place, and not an ounce of blood was lost during the operation, which was borne with the greatest fortitude by the patient, who expressed himself as relieved by the removal of the tension of the tumour. An opiate was subsequently administered, and he slept soundly for four hours. He then dosed at intervals, between which he appeared to become fainter and fainter. Wine had been freely given both before and after the operation; but, in spite of all stimulants, his extremities gradually grew cold, and he died slowly off, at four o'clock, on the morning of the 26th, ten hours after the vessel had been secured. There was no return of hemorrhage from the lower end of the artery, and the ligature after death was found firmly and closely fixed round the mouth of the vessel. And here I cannot refrain from testifying to the able manner in which this operation was performed, under circumstances of no ordinary difficulty, by Dr. Fox and the gentleman associated with him. The sudden loss of blood, consequent upon the rupture of the sac, though borne against for a time, appears to have been too great for the powers of life ultimately to withstand.

Upon examining the body thirty hours after death, it presented a very different appearance, as far as regards the tumour, from what it bore during life, its contents being removed, and the integuments of the groin lying flaccid and flat. The superior extremities were muscular, and the thorax and ribs well clothed, although, judging from the comparative size of the lower extremities, as exhibited in the drawing and cast, it might be inferred that the patient was emaciated, and ran down. On opening the cavity of the abdomen, the viscera and peritoneum were in a perfectly healthy state. The iliac arteries were healthy, and no abnormal condition of the parts could be detected, except that the tendons of the oblique and transversalis muscles on the left side were loose and lying in a fold, having, during life, been distended and pushed upwards by the aneurismal sac. The lymphatic glands were numerous and enlarged.

Upon dissecting the aneurism itself by reflecting the integuments, the sac was found to originate from the femoral artery, immediately after passing from beneath Poupart's ligament. The sac was of an hourglass form, being constricted by the fascia lata, the portion beneath the fascia extending in an oblique line downwards to the canal in the adductors; the portion above the fascia rising directly forwards and upwards, forming the tumour represented by the cast. Anteriorly, the tumour was covered by the sartorius muscle, which was spread over it to the width of four inches; posteriorly, it sank deep into the structures of the thigh, pressing against the capsule of the hip-joint, as well as against the neck of the femur. This pressure had been sufficient to create inflammation of the synovial membrane of the joint, as well as the cartilage on the head of the bone, which bore an arborescent appearance from red vessels ramifying in it. The periosteum was also removed from the anterior part of the neck of the femur, the bone being abraded and rough. To the outer side the sack was bounded by the shaft of the femur, and to the inner side it wended its way through the adductor muscles, the fibres of which (together with all the others in the neighbourhood), were stretched around the sac, forming as it were its superficial coat, the middle being a condensation of the tissues, and the innermost a lining of fibrine. The sac was still circumscribed below.

Upon examining the preparation, and tracing the iliac artery from above, it appears to be *perfectly healthy*, and of a natural size. It enters the sac by a small rounded opening, the edges of which are abraded by the ligature which was placed upon it as a temporary restraint to the hemorrhage, prior to securing the vessel above. The sac itself is polished throughout, lined by a thin layer of fibrine, rendered smooth by the friction of the blood. It measures, in its present state, after being immersed in alum, (and thereby greatly constringed,) eleven inches in length, and seventeen in circumference.

Its inferior connection with the artery is similar to the superior, being perfectly round and even, situated from it at a distance of three inches in a direct line. The femoral artery beyond the sac is perfectly healthy, running in its usual course to the canal in the adductors, at which spot it has been divided across. The artery, therefore, retains its normal condition, except as regards the formation of the aneurismal sac.

Not so the vein. Viewed from above, it is seen to be separated from the artery, the sac of the aneurism carrying it off at an angle, and pushing it rather to the outer side of the artery, and after traversing the superior surface of the aneurism for a couple of inches, it becomes obliterated, not permitting even a probe to pass. Below the tumour it has become completely transposed, lying altogether to the outer side of the artery, and maintaining this situation until it reaches the canal in the adductors, where it winds round the vessel and regains its natural position. From the sac, for the distance of two and a-half inches, it has become obliterated, assuming the appearance of, and feeling to the touch, like an artery plugged up with fibrine. Below this point it becomes pervious, and at the entrance to the tendinous canal resumes its normal size and shape. The vessels arising from the femoral artery are all obliterated at the sac, and, as it were, imbedded in its walls. The crural nerves are greatly stretched, flattened, and apparently enlarged.

These are the principal points to be observed in the morbid specimen itself. "The one, however," remarked Mr. Tufnell, "to which our attention as surgeons should be directed, is:—What mode of treatment could have been adopted that would have afforded any prospect of saving life?

"In the first place, the tumour had acquired such an enormous size, and so encroached upon the contents of the abdomen, lying, as it were, over and upon the external iliac artery, as to render it almost impossible to get at this vessel whilst the sac remained entire; the incision ordinarily made for the purpose of securing the external iliac artery, instead of coming down upon it, would have disclosed only the sac itself, with the external oblique and transversalis fascia distended upon it. The projection of the tumour into the abdomen precluded, therefore, this operation, unless it was preceded by evacuation of the contents of the sac, thereby restoring Poupart's ligament and its component tendons to their usual site. This, then, I consider, (if a similar case should occur,) ought to be the primary step, and that the operation performed by Dr. Fox, of cutting boldly through the centre of the tumour, turning out its contents, and tying the vessel as it entered the sac, should be the first thing done. The next step should be the placing of a ligature on the external iliac artery; and the final one, the removal of the limb at the hip.

"'Heroic' as this may appear, I feel certain that nothing short of it could offer any chance of life. Suppose that, instead of resorting to removal of the limb, we secure the artery only. We leave the patient then with the supply of blood to the limb almost totally cut off, for the pressure of the sac has obliterated nearly every branch of communication with the vessels above, and gangrene of the limb, I may say, would be inevitable. Should this event, by some possibility, not occur, there would still remain a cavity in the muscles of the limb, a vast suppurating sac, from which hectic would assuredly follow, and quickly run the patient down.

"There would also, in addition, exist general synovitis of the joint and erosion of the neck of the bone. These, however, depending upon a cause—namely, the pressure of the sac—which would now be removed, I will not throw much stress upon them, as they might spontaneously cease, and the reasons I have given above are alone, I think, fully sufficient to warrant the operation of removing the joint of the hip.

"This form of amputation has for the most part hitherto proved fatal, not from the loss of blood, but from the shock to the nervous system in general, and it remains for experience to show whether, under the influence of chloroform, we may not anticipate happier results.

"Such, I consider, will be the case; for, judging from the numerous instances in which I have myself used and seen chloroform employed by others, there has not appeared to be greater appreciation of injury to the frame where amputation has been resorted to than where a single tooth has been removed.'

"Dr. Bellingham had had the opportunity of seeing this case, and would take the liberty of offering a few remarks upon it. Many similar cases might, he observed, be found in the works of the older writers on surgery, in some of which a spontaneous cure took place, in consequence of the aneurism increasing so much in bulk as to press upon and obliterate the artery above the seat of the aneurism, after which suppuration ensued in the sac, and the patient ultimately recovered. In the case before the society, when the patient entered the Military Infirmary, there appeared to be no chance of a spontaneous cure taking place, the skin being, at that time, on the point of giving way. If, on the other hand, the common iliac artery had been tied, gangrene would undoubtedly have set in, or the sac would have suppurated, and the patient have been finally run down by hectic fever. With respect to Mr. Tufnell's suggestion of amputation at the hip joint, he was inclined to think that an operation which had succeeded in so few cases must inevitably have proved fatal in a case of so serious a nature as this, where the limb was extensively engorged. He considered that the plan recommended by Mr. Adams was that which gave the only chance of success. Whether the disease was left to itself, or whether the external iliac artery was tied, he must equally have died; but he thought the sac (as Mr. Adams had recommended), might with advantage have been laid open, the coagula turned out, and the case treated as a wounded artery, the vessel being tied both above and below the aneurismal sac."—*Dublin Medical Press*, March 7, 1849.

---

36. *Popliteal Aneurism communicating with the Knee Joint. Amputation of the Thigh.*—Mr. Adams related to the Surgical Society of Ireland the case of a coloured man named Flood, æt. 50, a cook on board a steam vessel. About five months ago, he accidentally discovered a tumour, about the size of a hen's egg, in the popliteal region, to which, as it gave him no pain nor inconvenience at that time, he paid little attention. Soon afterwards, he engaged himself on board of a vessel destined for Ireland, and, during the voyage, the tumour gradually enlarged, and grew painful, disabling him from making any use of the limb, and even obliging him to remain in his berth during the latter half of the voyage. Upon his arrival in Dublin, the pain in the part grew severe, and on the 6th of January, on application, he was at once admitted into the Richmond Hospital, where he (Mr. Adams) saw him on the following day. In the popliteal space of the right leg, a very large and shining tumour presented itself, accompanied with some tumefaction of the knee joint and œdema of the leg and foot. The pulse 84, the tongue white, and he complained of pain in the back part of the leg along the course of the sciatic nerve. On laying the hand upon the swollen limb, its surface was found to be remarkably hot. The popliteal tumour was tender to the touch, and felt remarkably tense. No pulsation was communicated to the fingers as long as pressure was lightly made; but upon making a firmer pressure with the hand, a movement was communicated to the fingers corresponding with the pulse of the patient. Pulsation ceased altoge-

ther when the femoral artery was compressed. On applying the stethoscope to the tumour, a muffled bruit de soufflet was perceived. The nature of the case was still further apparent from the fact that pressure upon the femoral artery had the effect of causing the tumour to become flaccid. No pulsation whatever could be felt in the arteries of the leg.

A consultation of the surgeons of the Richmond Hospital was then held, and though it was admitted on all hands to be a most unpromising case, still the proposition was made that treatment by pressure should get a trial. For Mr. Adams' part, it was his opinion that it was not a case for pressure, and that the aneurism was too large, and had been too much neglected to admit of any other resource than amputation; yet, as the urgency of the case was not extreme, he made no objection to the trial of pressure in the first instance. The man, however, would not tolerate pressure for any length of time, and though a variety of instruments were tried, and even opiates administered to enable him to endure the compression, the man himself insisted upon a more active practice being resorted to. It was observed that, since the day of his admission, the tumour underwent an increase in size, the measure of its circumference having been enlarged by a full inch and a half, and an ecchymosed spot appeared on the skin at the inner side of the knee. Under these circumstances, all idea of any operation for aneurism was abandoned, and on the 8th of January the limb was amputated about the middle of the thigh. Mr. Adams said his reason for not employing the ligature of the femoral artery in this case, was on account of the very large size of the aneurism; his own experience had taught him that, in cases where the popliteal aneurism was large, the tying of the artery was almost invariably followed by gangrene of the limb. This circumstance, he thought, admitted of an anatomical explanation. The principal reason why gangrene attended the majority of such cases was, as he conceived, that the anastomosing arteries arise from the popliteal artery so near to each other, that, if the aneurismal tumour be allowed to attain a large size, these vessels, either in their origin or course, will be so much implicated as to be rendered null and void as means of carrying on the circuitous and intermediate course of the blood from the femoral into the arteries of the leg, when the former artery is tied. Whether this theory was correct or not, some might question; but from his own experience in a considerable number of cases, he could confidently state that, where the aneurism had attained a large size, mortification of the limb almost inevitably followed the use of the ligature. Another argument against the employment of the ligature in such cases was, that, where the aneurismal sac had acquired a large size, suppuration was apt to ensue, ending in the rupture of its walls—an event which was followed by secondary hemorrhage and fatal constitutional irritation. He was aware, he will admit, of one case, where the artery having been tied, and mortification having ensued, the limb was successfully removed while the gangrene was still spreading: but this he believed to be an uncommon case, and rare cases are not to be made rules for practice. As to the case of Flood, the opinion entertained by the surgeons of the Richmond Hospital and by himself was, that amputation was the only resource. This opinion seemed in accordance with that of one of the most eminent French surgeons (Baron Boyer), as applied to such cases. Boyer was one of those practitioners who resembled very much Percival Pott, of England. This eminent French surgeon, writing in his 80th year, after an extensive practice spread over more than fifty years, expresses himself nearly as follows in the second volume of his Surgery:—"In popliteal aneurisms of large size, accompanied with symptoms of immediate rupture, great tumefaction, tension of the skin, œdematous engorgement of the limb, violent pain in the tumour, and in which there are grounds to suspect pressure has caused caries in the femur or tibia: in such cases, there is evidently no other means of saving the patient's life than amputation of the limb."

The amputation in Flood's case was performed under the influence of chloroform.

Dissection of the amputated limb.—The limb measured no less than nineteen inches in its greatest circumference, being seven inches more than the sound limb. The aneurismal tumour was well defined above and below, and measured nine inches in its longest and five inches in its shortest or transverse diameter. Posteriorly, both on the inside and outside of the limb, the tumour was bounded by the heads of the gastrocnemii muscles, which seemed to form a kind of muscular sac to cover it. The tendon of the biceps, instead of presenting, as it usually did, a round cord, was spread out into a fascia, which also covered laterally the aneurismal sac. The next circumstance that attracted attention was an aperture in the sac, situated just near the place where the inner hamstring and gastrocnemii muscles crossed each other, through which the blood escaped from the sac, and thus was accounted for the ecchymosis observed on the inner and lower side of the knee on the day preceding the operation—an occurrence which, when it took place in connection with an aneurism, gave good grounds for the surmise that the latter had commenced to become diffused. It was also interesting to observe that, in this case, the aneurismal tumour grew from the anterior wall of the artery, and not from its posterior wall, as usually happened with aneurisms in this locality; hence the artery was nearer to the skin than the aneurismal tumour. Upon passing a finger deep into the aneurismal sac, it was found that the latter communicated with the knee joint. This was the chief singularity in the case, and it clearly accounted for the swelling and inflammation in the joint, observed before its removal from the body. Indeed, he was not aware of a single case of an aneurism in this situation communicating with the knee joint, but there may be such on record. This circumstance of course tended considerably to aggravate the case, for the effused blood in the knee joint had led to synovial inflammation and to a softening of the articular cartilages, particularly *to that* which covered the patella. The specimen, too, was interesting in this point of view, in showing the anatomical appearances of an early stage of synovitis seldom seen. Dissection also showed that the pain felt along the limb was attributable to the pressure of the aneurismal sac upon the sciatic nerve, which was situated immediately behind it, and seemed to have been considerably stretched; and the œdema might be explained by the pressure exercised on the lymphatic vessels and vein. On examining the lower end of the femur, it was found to be very porous in one situation, as if it were corroded, and presenting an elevated ridge—a circumstance which had, before the limb was removed, attracted much notice. The periosteum over this roughened portion of bone was thickened, and came completely away from the bone when the sac was pulled from its situation. Since the operation, the man had gone on very favourably. It was then twenty-six days since it had been performed, and he had seldom seen a stump so well (as the cast would show), in so short a period.—*Dublin Med. Press,* Feb. 1849.

---

37. *Popliteal Aneurism cured by Compression.*—Mr. Tufnell communicated to the Surgical Society of Ireland (April 16th), a case in which both lower extremities were the subject of popliteal aneurism within a period of fifteen months, and in which compression was resorted to, each time, with perfect success.

The subject of the case was a sawyer, 27 years of age, who came under Mr. T.'s care on the 3d of November, 1847. Four months previously he had been suffering from constant aching pain in the right ham, which first occurred whilst running. He did not take much notice of it, and continued at his labour. He had formerly been a spirit drinker; but, having taken the pledge, had kept it up to the time of the races, when he began again to drink to excess; and he stated that the throbbing and pain had both sensibly increased after each intoxication. He had at the same time (four months before) also contracted venereal sores, for which he had been placed under the influence of mercury. The superficial inguinal glands had been inflamed, and at the period of applying for advice were irritable and tender. His health, he said, had latterly declined, he sweated upon any exertion, was readily frightened, and suffered from occasional palpitation; his pulse was 90 and irregular, but the sounds of the heart were natural.

The tumour itself filled the whole popliteal space, measuring three inches and a half across by three inches from above downwards. Its contents were perfectly fluid, a loud bruit accompanying the entrance of the blood when the limb was horizontal, which was indistinct when the patient stood erect. The centre of the tumour was painful: the integuments covering the sac, though not discoloured, felt to the touch scarcely thicker than a crown-piece. The temperature of the tumour was sensibly lower than that of the adjacent parts.

Pressure upon any portion of the femoral artery completely controlled the pulsation, the blood flying into the sac on its removal with a loud whirr and a jerk that caused much pain to the patient. He had constant numbness of the leg and foot, as also œdema of the limb.

Treatment was commenced upon November 5th, at two P. M. Twelve ounces of blood of a highly carbonaceous character were taken from the arm, and a drachm of the compound powder of jalap administered. At six P. M. pressure was applied. Read's instrument was placed upon the artery in the groin, and Savigny's ring tourniquet at the middle third of the thigh. The pulsation was entirely checked, and the patient instructed how to alternate pressure. This was kept up through the night until six A. M., when the pain became severe, and he removed the instruments altogether.

Nov. 6th, second day. Pressure was reapplied as before. Patient slept at intervals with the instrument on: pulse 78 and full; bowels affected once; no change in the tumour. Ordered to repeat the compound powder of jalap and pressure as before.

7th, third day. Inguinal glands inflamed; Read's instrument consequently removed, and the patient instructed how to make pressure on the artery with his thumb against the pubis, a lodger keeping his hand upon the tumour to ascertain the slightest return of pulsation, and to direct increased pressure accordingly. The ring tourniquet was moved to the entrance to the canal in the adductors. At the evening visit, the leg was found to be œdematous, and the patient complaining of numbness throughout the limb. This was speedily removed by bandaging with a flannel roller, and elevating the limb on a stretcher made for the purpose.

8th, fourth day. Patient making no complaint; the ring tourniquet has been continued on the thigh, and pressure by a seven-pound weight substituted for that of the thumb in the groin. Ordered to repeat the compound powder of jalap.

9th, fifth day. Says he has not slept; that there is much pain in the tumour; that he dreads unscrewing the ring tourniquet from the increased pain occasioned by the jet of blood into the sac; patient slightly feverish, and complaining of headache; bowels moved freely by the cathartic. Ordered to continue pressure, and repeat the jalap as before.

10th, sixth day. The pain in the tumour diminished towards morning, when the patient slept, and awoke free from thirst. He states that he does not now feel the blood jerk into the sac as heretofore, and that he does not mind its influx. Two clamps were substituted for the ring tourniquet and weight, one being placed at the centre of Scarpa's space, the other at the upper portion of the canal in the adductors.

11th, seventh day. Experienced much pain in the tumour and down the leg all the morning; at noon, whilst dozing, he was awakened by a sudden, acute, burning pain in the tumour and leg, which for two hours was very severe; it then gradually subsided; and, on removing the pressure, all pulsation had ceased. When visited at six P. M., the foot and toes were cold, but friction speedily restored warmth, which was kept up by an extra sock and flannel roller.

12th, eighth day. Sac solid; not the slightest thrill through the tumour; a large collateral vessel running down over the centre of its surface; slight numbness only of the limb; temperature natural; compression continued for precaution's sake. When visited at six P. M., he was found lying intoxicated in the bed.

13th, ninth day. Apparently not the worse for his debauch; all pressure removed, a bandage being fastened to the heel of his sock and to a belt around his waist to prevent sudden and complete extension of the limb during sleep.

18th. Seven days since pulsation ceased, and thirteen since compression was commenced. The tumour is now perfectly smooth and hard, and appears to be directly under the skin: superiorly, it fills the whole space between the hamstring tendons, and, inferiorly, sinks deep between the heads of the gastrocnemius muscle. Sensation is perfect both in the foot and leg, slight numbness only remaining; circulation is assisted by three superficial vessels: one running down over the centre of the tumour; a second on the outside over the head of the fibula; and a third on the inside of the knee. Is taking exercise with the aid of a stick; *in every respect perfectly well.*

On the 10th of December, he returned to his work as a sawyer (under man in a pit), and continued at uninterrupted employ until the 13th of November, 1848. He presented himself again on this day, stating that he was afraid something was the matter with the opposite knee, as it had for some short time felt stiff. He had not run, jumped, or taken any violent exercise, but had been working in the wet, and he thought, therefore, that the pain was rheumatic.

Deeming it almost certain, from his history, that aneurism was about to form, I examined the part most carefully, but not the slightest tumour, bruit, or other diagnostic sign, could be found to exist in the ham. The temperature of the limb was natural, the posterior tibial artery could be felt at the ankle, and there was no œdema of the foot.

He was desired to foment the joint, and attend again in a few days. On the 26th, he made his appearance, and in this brief interval a considerable change had taken place. Pulsation was now perceptible, and, upon examination by the fingers, a tumour could be felt deep in the popliteal space, two inches and a half in length by an inch and a half in breadth, the contents of which were fluid, and into which the blood entered with much force, and a loud single souffle. The pulse was 84. The action of the heart was regular. No trace of disease could be detected in this organ; but the patient stated that occasionally a slight difficulty of breathing and tightness across the chest would exist.

During this fortnight, he had been following his occupation as a sawyer. On the 27th of November, treatment was a second time commenced in the lodgings of the patient, which were now removed to 72 Sir John Rogerson's Quay. A ring tourniquet, on Savigny's principle, but fitted with Dr. Carte's elastic apparatus, was placed upon the middle third of the thigh, and the patient directed to make pressure upon the artery in the groin with his thumb, or a seven-pound weight, when he wished to relieve the other point of compression. He wore the tourniquet without inconvenience for six hours, then removed it and went to sleep.

28th. The instrument was readjusted, and pressure continued as before; no change.

30th. Progressing favourably; less pulsation, and the bruit not so distinctly heard; pulse 72; sleeps soundly at night by relaxing the pressure.

December 3d. Dr. Carte's instrument was removed to-day in order to have an alteration made, and Savigny's ring tourniquet substituted for it.

6th. Patient not suffering any pain or inconvenience; the sac is more defined, as if lined with a layer of fibrine.

14th. Little change since last report until 5 o'clock yesterday afternoon. The patient stated that about that hour he was seized with nausea, succeeded by general tremor and clammy condition of the surface of the body. To this a sharp, burning pain speedily succeeded, running from the popliteal space to the outside of the leg. This lasted for half an hour, and then subsided. At nine P. M. he removed the clamp, and found that all throbbing has ceased. His wife, who was well acquainted with the pulsation, examined the limb as well as the patient himself, and was satisfied that the disease was cured. Pressure was accordingly discontinued, and at eleven o'clock he fell asleep. On awaking at six this morning, the throbbing had returned, and when visited at noon the pulsation of the sac was as strong as on the day before; a vessel of large size, however, could be distinctly felt running over the centre of the tumour behind. Compression reapplied as before.

20th. Pulsation becoming daily more feeble; bruit now scarcely to be heard.

26th. The sac decreasing rapidly in size, not being larger than a walnut, with very slight pulsation in it.

January 6th. No bruit, but a single click still to be heard by the stethoscope; the tumour now so small as to fit into the bell of the instrument. Allowed to leave his bed, continuing the pressure.

9th. *Sac solid;* at twelve o'clock a general sensation of faintness came over the patient, which was succeeded by burning pain in the tumour and down the outside of the leg; on its diminishing, he fell asleep, and on awaking, all pulsation had ceased.

10th. Leg rather cold; no other feeling of uneasiness; one large vessel running over the centre of the tumour, and another on the inside of the knee. Pressure was continued, and the leg bandaged with flannel.

11th. Pressure discontinued; patient allowed to walk about with the aid of a stick.

February 10th. The popliteal space was examined to-day; no sign of the sac now remained, excepting a small hard body about the magnitude of a horse bean, which lay in the course of the artery; the temperature of the limb was equal to that of its fellow; the patient had now been at his work as a sawyer for upwards of three weeks.

Mr. Tufnell, in his remarks on this case, observes that "compression was put fairly to the test, and that its success was complete. Though the patient was a man of intemperate habits—though the treatment was conducted in a small crowded attic, with two families living in the room, and closet adjoining—though the management of the instrument was left in a great measure to the patient himself, yet a cure was accomplished in the first instance in a less number of days than would have been required to have prepared him for the operation of tying; and in the second he was again at his labour in a period fully as brief as could have been anticipated from the most successful application of the ligature, being at the same time spared every danger attendant on it.

"Before attempting to prove the futility of the objections which have been raised against the treatment of aneurism by compression, I will make a few remarks upon the case just detailed. The first point worthy of attention is the difference in the length of time occupied in the progress of cure. It may seem difficult to ascribe a reason why a small and recently formed sac should in the same individual require nearly seven times as long for its obliteration as one of older standing and of larger size, but I think it may be shown to depend partly upon the disease itself, partly on the mode of cure.

"When an aneurismal tumour has acquired sufficient magnitude to fill the whole of the popliteal space, the tension of the fascia upon it has the effect of compressing the sac; thereby obstructing the current of blood through the vessel itself, and causing the collateral vessels to enlarge, indirectly paves the way for the future cure—a condition which, I conceive, may be materially assisted by treatment directed to the circulating system itself.

"The first time that this patient was under treatment, venesection was employed at the onset with the view of diminishing the quantity of blood, and thereby reducing tension of the vessels. At the same time, a serious drain upon the intestines was established by the compound powder of jalap. The supply of fluid was limited to a small quantity of tea; thirst, when present, was allayed by a diuretic in the form of imperial drink, and the diet was restricted to bread, butter, and biscuit, with a little stirabout at night; everything, in fact, being done with the view of diminishing the serum, and leaving the blood in a highly concentrated condition. In addition to these general measures, pressure upon the artery was maintained uninterruptedly night and day.

"On the other hand, the second time that he came under treatment, no such exactions were made. His ordinary habits of living were not interfered with (excepting that he was forbidden the use of spirits and beer). Purgatives were only resorted to when constipation ensued, and pressure for the most part was intermitted at night. It is to this, indeed, that I mainly attribute the tediousness of the cure, for until the collateral circulation is well developed, so as to divert the blood from the main artery of the limb, its every effort will be to take the larger and readier course. (This enlargement of the anastomosing branches is visible in many instances prior to obliteration of the sac.)

"The second time of being under treatment, the superficial vessels were developed on the 14th day, and upon this night pulsation temporarily ceased—an effect which would, I consider, have been rendered permanent, had not compression been abruptly removed.

"The return of pulsation in this case goes far, I think, to show that the final obliteration of the sac is owing to the gradual filling up of the cavity with fibrine, and not that the lower opening of the artery becomes suddenly plugged by a portion of this substance which may become detached, and that coagulation consequently ensues. Were this the case, when once the vessel was closed pulsation could not possibly recur. I consider rather that, as soon as the collateral vessels are sufficiently dilated to afford free passage to the current of blood, too little passes through the sac to cause dilatation of it, and that the stream then becomes so diminished that a few hours are sufficient for the total solidification of its contents; but if, prior to the complete obliteration of the cavity, pressure be altogether removed, the blood at once resumes its natural channel, and pulsation then returns. This should be a reason for continuing compression for twenty-four hours at least after the cessation of pulsation in the sac and an apparent cure.

"In alluding to the enlargement of the anastomosing vessels, I may refer to the uniformity with which these branches become developed. In the cases detailed, and in every other that I have been witness to, one vessel of very considerable size has run down the centre of the tumour behind, apparently beneath the integuments; a second on the inner side of the patella; and a third one (less constantly felt) outwards over the head of the fibula.

"The artery which runs down the centre of the tumour is sometimes as large as the radial, and is, apparently from its direct position, the main medium of circulation after obliteration of the trunk. Judging from the injected preparation of limbs where the femoral artery has been tied, the vessel in question would appear to be the branch that accompanies the sciatic nerve (*comes sciatici*), which in cases of ligature of the femoral becomes tortuous and greatly enlarged; but it is so in this case, I consider, mainly, because the transmission of blood by the femoral being suddenly stopped, a corresponding increase is thrown upon the internal iliac and profunda.

"Under treatment by pressure, on the contrary, the femoral artery remains pervious down to the very sac, and from a careful dissection of the parts connected with popliteal disease, I am inclined rather to believe that the vessel in question is one which (though constant) has not hitherto received a name, and which, arising from the posterior aspect of the popliteal artery, five inches above the head of the fibula, and three above the bend of the joint, gives a branch to the semi-membranosus and also to the biceps muscle, and then runs down through the centre of the space accompanying the external saphena vein.

"By a close observation of the course of the arteries surrounding the joint, I am also led to conclude that the collateral branch which generally is found to pulsate on the inside of the patella, is not the internal articular, but a branch of the popliteal, given off at least an inch above it, which, instead of running under the tendon of the adductor magnus, between it and the bone, passes superficial to the tendon, immediately beneath the integument parallel and in company with the tendon of the gracilis muscle. There is also a third arterial branch, which I look upon as being closely connected with the subject of compression; this is a vessel of considerable size, which, leaving the popliteal a little above the origin of the articular arteries, runs down, intimately connected, if not actually in the substance, of the communicans peronæi nerve. It is this artery, I consider, *that gives rise to that burning pain experienced at the period of cure; the sudden distension of the vessel, and its consequent pressure on the nerve, causing the painful sensation so universally described.*"—*Dublin Medical Press*, May 16, 1849.

---

38. *Remarks on the Objections which have been made against the Use of Pressure for the Cure of Aneurism.*—Mr. Tufnell, in a paper read before the Surgical Society of Ireland, reviews the objections which have been urged against the employment of compression for the cure of aneurism. "These are," he remarks, "that compression is *painful*, *wearisome*, and *ineffectual*. I will grant

that it may be rendered such if the mode of treatment be not thoroughly understood, or if instruments for controlling the circulation be employed which are not suited to the purpose, or are used with an unnecessary degree of force. In the first place, in adopting this treatment, it is desirable that the principle of cure should be fully explained to the patient, and that he should be made a willing party in carrying out the surgeon's designs; that, instead of being told to keep up pressure upon the artery at any particular spot for a given length of time, he should be recommended to raise the pad directly when it begins to cause annoyance, taking care, of course, that before doing so compression is made on another portion of the vessel.

"Pain, I may add, is often needlessly caused by not paying sufficient attention *to the minimum amount of pressure* that will control pulsation in the sac, but as if to make assurance doubly sure, giving two or three additional turns to the screw after this object has been attained. It is to the screw, indeed, that the suffering hitherto felt may principally be referred. Pressure in one form or other has, almost in every instance, been effected by its aid, and whether used in a greater or a less degree, it has invariably been a dead, unyielding force, allowing no play or contraction to the muscular fibre beneath. This, the only valid objection to the use of compression, has now been entirely removed by the apparatus of Dr. Carte, and the introduction of an elastic pressure through the medium of vulcanized India rubber.

"In this instrument, the screw, as a means of compression, has been done away with altogether, its place being supplied by a band of vulcanized India rubber. The advantages it offers are immense. Whilst I have never known a patient to bear compression by the screw for a longer period than *three* hours at once, in the case just detailed, Dr. Carte's apparatus was worn for double that time, and I have known it kept on for a longer period still. When used in the case of Atkins, the instrument was incomplete. It was so contrived, that when the pad was let down on the artery, it could only be lifted off it by manual force. This required the patient to raise himself to the sitting position, in order to obtain a purchase, and to remain so, using considerable muscular exertion, until the parts beneath had so far recovered their tone that the instrument could be reapplied. Its employment being, on this account, interdicted in cases where a suspicion existed of internal arterial disease, Dr. Carte was induced to add a male and female screw. By this simple modification every objection has now been removed; a few turns of the former raise the pad from off the vessel, whilst the latter retains it there. The infliction of pain by this instrument is really so slight that I am certain the strongest opponents to compression will, upon a trial, withdraw this charge.

"The second objection raised to compression is, that the treatment is *wearisome* and *prolonged*. This, as a general assertion, is not borne out by facts. There may be particular instances where the cure has been protracted to an unusual length; but, taking the average of the time which has hitherto been consumed in the cases that have been made public, nine-and-twenty days only have been occupied in the progress of cure, and this, too, be it recollected, at a time when the treatment was in its infancy and but imperfectly understood. Granting, however, that nine-and-twenty days are required for the cure by compression, let us contrast this period with the average duration of treatment by the ligature and knife.

"From the time that a patient with aneurism is admitted into hospital, until he is placed upon the operating table, we may, I think, safely regard it as a week; from the application of the ligature to its separation, we may consider as sixteen days longer; and for closure of the wound and cicatrization, we may reckon on seven days more, or a time, upon the whole, fully as great as that hitherto occupied by compression. I have taken the average of all the cases hitherto treated by compression, and find it to be nine-and-twenty days. Were I to do the same with every case where ligature has been employed, it would greatly exceed this time.

"But the sweeping assertion that compression is *wearisome* and *prolonged*, ill accords with cases that can be adduced, where not even days but hours were sufficient to complete the cure. I will specify two that, within a recent period, have come under my own observation. In the first* of these, ten hours only elapsed before the pulsation had ceased; and in the second,† a large femoral aneurism was solidified in thirty-three. This latter case is worthy of record. The patient was sufficiently recovered to be enabled to leave the hospital in ten days, and *to be married within three weeks from the time pressure was first commenced.* Can the advocates for the knife bring a parallel case to this?

"Lastly, the treatment by compression is said to be *ineffectual.* In reply, I would refer skeptics to the fact that, in a period of nearly four years, in all the hospitals of Dublin, and in private practice as well, the ligature has only been resorted to once, and this a case of traumatic aneurism at the bend of the arm, where the operation subsequently showed a high bifurcation to exist. I would, however, refer those who doubt to the records of this society, to the able work of Dr. Bellingham, and the tables of Edwards Crisp. The latter may not prove satisfactory to those who affirm that the treatment by compression is *dangerous,* whilst that by the ligature is *easy, gentle,* and *safe.*

"In the work of Dr. Crisp are detailed 206 cases of femoral and popliteal aneurism. In 185 of these the vessel was taken up, and the result of which operations is shown in the following table:—

Died from the effects of the operation - - - - - -	33
Recovered, after suffering subsequent amputation - - -	10
Recovered, after sloughing of the sac - - - - - -	3
Recovered, after mortification of the toes - - - - -	1
Recovered, after sloughing of the integuments - - -	1
Making a total of - - - - - - - -	48

"So that more than *the fourth of the cases treated by the ligature either terminated fatally, or were maimed for the rest of life.* This, too, not occurring in the practice of young and inexperienced men, but to Hunter, Pott, Cline, Cooper, Bell, Guthrie, Lawrence, White, Brodie, Carlisle, Syme, Travers, and others of almost equal note.‡ From this analysis, therefore, so far as regards the ligature, the conclusion to be drawn is, that, in the generality of cases of aneurism of the extremities, it should be laid aside. What object is to be gained by its use that is not equally attained by compression? Does its application exert any specific influence upon the sac? If so, I should, for information's sake, be glad to have it explained, for at present my conviction is, that, as far as regards the aneurism itself, the effects of compression and the action of the ligature are *identically the same.* That in both cases the direct current is arrested, and the impulse of the heart no longer communicated to the sac. That the blood, previously propelled with an injurious momentum, now trickles harmlessly through the collateral vessels, eddying in its passage in the hollow of the tumour, and lining it with fibrinous layers.

"Such I believe to be the *modus operandi* of cure in either case, and where the condition of an aneurism is such as to allow of this effect being produced by means of the ligature, I am certain it will equally be the result of compression, *if properly applied.*

"As to the success attendant upon the employment of compression, I will only add that, since the year 1843, no less than *thirty-five* cases have been published, in which the disease has been permanently cured without injury to life or limb. With these facts openly detailed, I consider that in the present day no surgeon is justified in taking up an artery for the cure of external aneurism, *until compression has been tried and failed,* any more than he would be in operating for hernia without attempting to reduce the bowel.

"When prejudice can be overcome, and compression be as generally adopted as it has been in this metropolis, I feel certain that the operation of tying will be very seldom resorted to, and I do believe that, in the words of a recent writer upon the subject—'We may confidently look forward to the day when ligature in aneurism of the extremities will cease to hold a place in operative surgery, when it shall have become a matter of professional history, a practice of by gone days.'"*—*Dublin Med. Press*, May 16, 1849.

---

* Case 23d. Dr. Bellingham on Compression.

† Medical Press, December 1st, 1847.

‡ We may also fairly infer that, in these tables, are included the majority of the cases which have been attended with a favourable result, and from the reluctance which many men have to record their unsuccessful operations, we may, I think, with equal justice presume that numerous fatal ones have not been detailed.

---

39. *Cases of Aneurism cured by Compression.*—Dr. Edward Hutton has communicated to the *Dublin Medical Press* (May 16th), the two following cases of aneurism successfully treated by compression:—

Case 1.—James Collins, æt. 34, a farm servant, was admitted into the Richmond Hospital on the 22d of July 1848, for aneurism of the left brachial artery. He stated that two months previously he was bled in the left arm by a "country bleeder" for a pain in his chest. He remarked at the time that the blood spurted out to a great distance, and was of a bright red colour. There was much difficulty in stopping the bleeding, and the bandage was put on very tightly. In three days he removed it, and found that the external wound had healed, but beneath this he observed a small pulsating tumour. He, however, returned to his labour, and continued to work for about a month, when he was obliged to desist on account of pain and a sense of weakness in the arm. The tumour had begun to increase a week before this, and pulsated strongly. No treatment was applied until his admission into hospital: the tumour was then about the size of a pullet's egg, and presented the usual characters of aneurism. When pressure was made on the brachial artery above the tumour, it lost its pulsation and tension, and yielded in some degree to pressure, but did not wholly collapse, indicating the presence of some coagulum in the sac. The skin covering this was of natural colour and thickness. The radial and ulnar arteries pulsated distinctly at the wrist. Immediately on his admission into hospital, the treatment by compression was commenced. The instrument first used was the screw-clamp, and although the pressure was applied occasionally at different points in the course of the artery, and so regulated as only just to stop pulsation, yet he was never but once able to sustain it for four hours together. After using the screw-clamp in this manner at intervals for twelve days, with but little effect upon the tumour, it was laid aside, and Dr. Carte's instrument was applied; with this the patient maintained the compression during six hours in succession, and made much less complaint of its application. At the end of this period, all pulsation had ceased, and never returned. The aneurismal tumour did not, however, begin either to diminish in size or to increase in firmness until nearly a fortnight afterwards, when these changes commenced. He was detained in hospital until the 19th of September. The tumour was then very firm, and about one-fourth smaller. Immediately on leaving the hospital he returned to his labour, and was actively employed in gathering in the harvest. In March, 1849, I heard from Dr. Harkan, of Elphin, and subsequently from the patient himself, that the tumour was very small and firm, that he felt no inconvenience whatever from it, and had the full use of his arm.

Case 2.—Philip Dignam, æt. 32, applied for advice on the 3d of January, 1849, for an aneurism of the left popliteal artery. The tumour was about the size of a hen's egg, situated in the lower part of the popliteal space. It pulsated strongly, and presented all the usual signs of aneurism. When the femoral artery was compressed, the tumour became flaccid, and could be emptied of a considerable portion of its contents, but some solid coagulum remained. He stated that, about six months previously, he first felt a "stinging pain" in the ham; this was occasional only, and did not prevent him from following his usual employment. Two months before his application for advice, he first perceived a tumour which was pulsating and painful, and attended with numbness and weakness of the leg. The tumour slowly enlarged to the size mentioned; his general health was good, and he had not confined himself to his house until a day or two before he came under treatment. On the 3d of January, I applied

---

* Porter on Aneurism.

Dr. Carte's compressing apparatus. The patient was informed of the nature of his disease; of the alternative that awaited him if the plan of compression failed; the mode of managing this was explained to him, and he was exhorted to maintain the compression for six or seven hours, or longer if he could. He was very anxious to avoid an operation, and readily undertook the treatment. The next day, January 4th, the pulsation in the tumour had ceased. He reported that he kept up the compression seven hours and a half in succession, and that, during the whole time of its application, no pulsation returned to the tumour, nor did it after the removal of the instrument. The temperature of the leg and foot did not appear to differ sensibly from that of the sound limb, but the thermometer was not applied. It was difficult to feel pulsation distinctly in the tibial arteries of the right leg, and impossible to do so in the left. Perfect rest and moderate diet were enjoined. After a week, some obscure pulsation was perceived, not dilating the tumour, but as if the popliteal artery was pervious along its base. Dr. Carte's instrument was, therefore, again applied for three hours, after which this pulsation was no longer to be felt. Two arteries were traced along the surface of the tumour; one about the size of the temporal, the other smaller. The case now progressed favorably, the tumour became very firm, and diminished in size. In less than four weeks from the commencement of the treatment, he returned to his employment in a butter crane, where he was engaged in lifting heavy weights. I have since seen him occasionally. The tumour, when last examined, was about the size of a nut, and of firm consistence. The pulse in the femoral artery could be felt along its course to within two inches of the tumour. He was free from all uneasiness in the leg, and in fact was completely cured.

Remarks.—Dr. Carte's application of an elastic force in the compression of arteries promises in a great measure materially to lessen the pain attending it, and thus to remove the only plausible objection to this mode of treating aneurisms becoming a rule of surgical practice. In the first case related, the patient was very sensitive to pain, and had not fortitude to endure the screw-clamp for the requisite period; while he was able to sustain the elastic force for six hours without shifting the instrument from the artery, and this period proved sufficient for his ultimate cure. In the second case, the compression was maintained during seven hours and a half without relaxation, which I am persuaded could not have been borne with the screw clamp.

OPHTHALMOLOGY.

40. *On Inflammation of the Eye from Injury.* By Dr. Jacob.—[We commend to the attention of our readers the following important practical remarks on inflammation of the eye from injury, read to the Surgical Society of Ireland by one of the soundest and most judicious ophthalmic surgeons of our day, Prof. Jacob, of Dublin.]

"Practitioners appear to think that all injuries of the eye are to be similarly treated, and that nothing more is necessary than to proportion the treatment to the amount of injury: they seem to assume that in all cases depletion, purgatives, denial of food, antimonials, mercury, and other usual remedies, are to be adopted, and that all they have to do is to consider the amount or extent to which they should be carried. This is a great mistake, for the destructive processes of inflammation are in many cases greatly disproportioned to the injury sustained: a scratch or puncture of the cornea will often cause destruction of the entire eye, while an extensive wound, even with laceration and contusion, will sometimes be repaired without extension of the consequent inflammation to the parts untouched. So far from considering inflammation of the eye, when caused by injury, to be of more simple, uncomplicated, or uniform character, I look upon it to be the inflammation which affords most frequently examples of peculiar modification or specific peculiarity. It will be intense in its nature, and rapid in its effects, or languid in its action, and slow or chronic in its progress: or it will assume the rheumatic, neuralgic, or scrofulous character; and even when latent syphilis is present in the system, it may be influenced by that poisonous influence. This may appear to some an assumption unsustained by facts, but of its truth I entertain no doubts: I have too often seen these modifications of inflammation following accidental injuries and operations, to be at all undecided on the subject. Even what may be considered the extreme case amongst them, the syphilitic species, I am convinced, sometimes occurs; because I have so often seen true syphilitic iritis attributed by patients to slight accidents, and I believe on just grounds, that I cannot but admit the possibility at least, of such combination. Indeed, the question may be fairly mooted, whether syphilitic iritis may not be in all cases an inflammation from ordinary causes modified by the constitutional syphilitic diathesis, rather than a local concentration of the disease displaying its distinct and peculiar specific characters. This is, however, a speculation not to be dwelt upon here, and I have therefore to return to the subject more immediately under consideration, the nature, amount, and consequences of inflammation caused by injury. The first question to be determined in this inquiry may appear to some a novel one, and yet it is one which should be settled. Is inflammation a necessary and inevitable consequence of injury of the eye? That it follows from contused and lacerated wounds, or deeply penetrating punctures, must be admitted; but that it always follows simple incised wounds, remains to be proved. We are, I believe, indebted to the late Dr. Macartney for suggesting this question to surgeons with reference to injuries in general, in his work on Inflammation; and I am satisfied of the correctness of his views from observations of injuries of this organ. This inquiry, however, cannot be entertained here: it is sufficient for the present purpose, to assume that practitioners not only no longer consider some inflammation necessary for the reparation of injury, but that they consider it necessary to adopt every measure and precaution to prevent or arrest that process. Not only have they arrived at this conclusion, but in my opinion, they proceed under an exaggerated notion of its importance. They appear to think, as I have already said, that every wound of the eye, however slight, demands what is called active treatment, and that severer injuries require extraordinary measures. According to my experience, wounds of the eye are followed, either by no inflammation; by suppuration, if it is the cornea which is injured; by common or ordinary inflammation; or by a slow disorganizing species of inflammatory action, sometimes modified by rheumatism or scrofula, or other constitutional disease.

"When the cornea is punctured, as it sometimes is, by a needle, the prong of a fork, an awl, or a thorn; or when it is cut by the point of a penknife, broken glass, or fragments of stone or metal, the surgeon has nothing to do in the way of manual operation; but if the wound be large, and especially if it be a lacerated one, and extending through the iris, or allowing that membrane to prolapse, he has then to adjust the divided edges with a blunt probe, or the instrument called a curette, and to replace the iris, if possible, by gently pressing it back. Having done this, he should consider what means he has at his disposal in the way of local application to prevent or allay inflammatory action. The eye is, I believe, in such cases generally bandaged up, with or without what is called, and perhaps appropriately, a "compress," wetted with some lotion. This is bad practice. The surgeon has two objects to attain by his dressing: to prevent mechanical irritation by friction of the lids, and to keep the parts cool by evaporation. To effect this, a single layer of soft old linen wetted with cold water, is all that is necessary; but if the patient be obliged to move about and to attend to business, it is not easy to make such an application without pressure. I use an oval piece of old linen sufficiently large to cover the parts from above the eyebrow to the cheek, secured with strings of tape, and direct the patient to keep it constantly wet, by squeezing a sponge or rag dipped in cold water over it. With working men, who are generally the subjects of such accidents, I am, however, often obliged to sacrifice the advantage to be derived from evaporation, in consequence of their being unable to keep the linen wet, and am compelled to rely on the mere interruption of motion of the lids, with the relaxation of surface secured by moisture. With this view, a scrap of oiled silk lined with old linen, and wetted when it becomes dry, is substituted for the evaporating application. In greater injuries of the eye, more precautions must be adopted. When the cornea is extensively divided, with or without division or prolapse of the iris or injury of the lens, the local treatment must be the same as that employed after the extraction of a cataract: both eyes must be kept closed, to prevent the separation of the lips of the wound by the motion of the eyelids, while temperature is to be lessened, or its increase retarded by water-dressing. With this view, something in the shape of bandage must be employed, although, from the pressure it causes, it is generally to be avoided. I lay one layer of old linen, about three inches wide, across both eyes, and instead of securing it in its place, by passing it round the head or pinning it to a cap, by which unequal pressure is produced, I have it touched at the ends with a little adhesive plaster, and by this means cause it to adhere to the temples, and by similar means to the forehead, just above the nose. This layer of old linen I direct to be constantly wetted with cold water where it touches the eye. After the second day, I merely cause scraps of wet linen to be laid over the eye, and as they become dry during sleep at night, I allow them to fall off at that time. If there be danger of the iris becoming entangled in the wound, or during the subsequent healing adhering to it, a belladonna lotion should be substituted for plain water, and the lids and brow should be painted with the extract once in twenty-four hours. If severe inflammation comes on, indicated by intense redness of the sclerotic and discoloration of the iris; and in cases where the cornea has been injured, accompanied by suppuration, cold-water dressing, or mere interruption of the motions of the eyeball and lids, will not be sufficient. Such a state is attended by severe pain, and demands a trial at least of warm applications in the shape of stupes or even poultices. These will not always relieve pain, or reduce inflammatory action, but it must, I think, be admitted that they often have a soothing effect, and that their application is often followed by a diminution of the increased vascularity and reduction of any tumefaction which may have taken place. It is not easy to reconcile the theoretical explanations given of the effects of two such opposite agents as heat and cold, but it must be admitted that they are both found beneficial in the treatment of inflammation, and I have no doubt that they are useful in inflammation of the eye from injury or other cause.

"In severe wounds of the eye, the surgeon has at first to deal with the peculiar accidents which must be found where an organ of such complicated structure is the seat of injury; union of the divided edges is to be secured, and a prolapsed iris is, as I have already observed, to be reduced; while foreign bodies are to be removed, or even the lens itself, if displaced. Subsequently, the proximate effects or consequences of inflammation are to be encountered, such as abscess in the cornea, and, as I have already said, adhesions of the iris to the capsule of the lens. Foreign bodies should, if possible, be removed, but they may have been driven so deeply into the eye, or so entangled in the iris, that much manual and instrumental interference may be necessary. Small particles of iron, brass, stone, or other material sticking in the cornea, must be removed at once with the point of a needle; and I am convinced that no needle is better suited to the purpose than that which I used for operating on a cataract. Larger pieces may require the use of the forceps or curette for their removal, and it may be necessary to follow them into the interior of the eye, and even to enlarge the external wound. This must, however, be done with great caution, as the lens, if not already injured, may be wounded, or the iris may be cut or torn, and the vitreous humour forced out. There may also be more difficulty in removing such fragments than the operator may at first suppose, as they may be entangled in the folds of the iris, which becomes flaccid when the aqueous humour escapes, or they may be lodged in the lens or vitreous humour. If the crystalline lens has been wounded, and especially if it has been detached from its capsule, and thrown forward against the iris, or in front of it, it should, if possible, be removed, broken up, or depressed. It never should be allowed to remain in the anterior chamber, especially in aged persons, but should be extracted, depressed, or reclined, because it swells from imbibing the aqueous humour, or, if hard, remains undissolved for many months. These operative means of relief must, however, be employed immediately after the infliction of the injury, as they can scarcely be resorted to after inflammation has set in.

"The local treatment of the proximate effects of inflammation following injury, sometimes is of considerable importance. Abscess of the cornea often follows slight punctures or scratches of that structure, as from foreign bodies, and the removal of them. The practice of opening such abscesses has been questioned, but in my opinion it is as necessary to give exit to matter in this situation, in order to prevent extension of the injury, as it is in other situations. Matter secreted into the chamber of the aqueous humour, if small in quantity, as where it constitutes hypopion, requires no opening for its escape: it will be absorbed sooner or later; but if it accumulates in such quantity as to fill the entire chamber and to cause distension, it should be discharged. Sometimes when it is formed in the cornea it is diffused in its texture, but more frequently it is lodged in a distinct cavity, and in this case, especially if large, it should be opened. This should be done with a keen extracting knife, and requires careful and delicate manipulation; a common lancet is a very awkward instrument for the purpose. The surgeon, however, must be prepared for consequences apparently caused by his interference. The parts become so much thinned by the suppuration, that an opening takes place into the anterior chamber, and the iris prolapses; but this is a consequence which does not cause loss of vision, unless the opening be very large, and the portion of the iris protruded very great: smaller prolapses of the iris are followed by irregular and eccentric pupil only. This prolapse should not be attributed to the opening of the abscess; that operation probably often prevents this mischief, if done in time, or, if it does not prevent it, renders it less destructive. It is usual to touch the little tumour formed by this prolapsed iris with nitrate of silver, to reduce its size, and to allay the painful sensibility of its surface. This I do not consider necessary, because, when small, it shrinks to a level with the cornea in healing, and, when large, it is better to allow it to become firmly adherent to the opening through which it has passed, and somewhat consolidated before interfering with it. After the inflammation has subsided, it may, before or after cicatrization, be punctured or even freely opened, should it create uneasiness or deformity from its size or prominence, which causes it to fall flaccid, and ultimately to contract; it is often, however, necessary to repeat the puncture several times before this object is accomplished.

"The general or constitutional treatment of inflammation of the eye from injury, is still more important than the local management. Destruction of the organ takes place either from the suppuration to which I have alluded, or from the inflammation extending to all its parts, and causing cataract or amaurosis, or both, with or without contracted and adherent pupil. The suppuration, with its consequent ulceration, affords a most instructive lesson to the surgeon, displaying, as it does, the influence of constitutional derangement on local inflammatory action. When slight injuries of the cornea are followed by this effect, it is obvious that it is not the amount or extent of the wound which causes the greater mischief, but some condition of the system which alters the ordinary operations of the animal economy. Destructive ulceration or abscess is, I think, uniformly accompanied by obvious derangement of the digestive, assimilating, and nutritive functions. The tongue is white, and often even brown, in the centre, while the stomach is uneasy, and disturbed by flatulence and acidity. The fecal discharges from the alimentary canal are seldom examined in such cases; but if attended to, will probably be found mixed with undigested food, and deficient in the colour which the bile imparts to them in a state of health; the urine also affords evidence of gastric disturbance by a deposition of urates or uric acid. In fact, both from these symptoms, and the aspect of the patient, as well as from the account given of his habits and dietetic irregularities, the surgeon appears fully justified in assuming that the local mischief is aggravated, if not caused, by the constitutional diathesis. Abscess of the cornea, or secretion of purulent matter into the chamber of the aqueous humour, whether from injury or irritable ulcer, I find almost uniformly takes place in aged persons, either of feeble frame, or of that turgid habit of body which indulgence in the excesses of the table causes; and in younger subjects who lead irregular lives, and are subject to great vicissitudes of diet and weather. In children, the same consequence is observed in those badly fed, insufficiently clothed, and confined to impure atmosphere; whether in the nurseries of the gentry, or the close rooms and cottages of the poor. Keeping all this in view, the practitioner should, in my opinion, direct his attention in these cases where suppuration follows slight injury, to this state of the assimilating organs, rather than rely on depletion and mercury. I do not mean to advise that he should not bleed where a plethoric state of the system exists, or that he should not resort to mercury if the inflammation does not speedily yield; I only wish to inculcate that the destructive changes in progress in the organ will be best arrested, by inducing a healthy state of the nutritive functions. To effect this, he must begin by removing the contents of the intestines by purgatives, of which every one has his own form of prescription. If there has been no previous constipation, I find a dose of the compound colocynth pill, with two or three grains of calomel at night, followed by a purgative draught in the morning, sufficient; but if there should be reason to suspect that there has been for some time an inactive state of the alimentary canal, I keep up the purgative effect by giving three grains of the same pill, with one of calomel, three times a day, for a couple of days. The second day I commence with five grains of the pilula hydrargyri at night, followed by some bitter infusion, with alkali in the morning, and middle of the day. A mixture of infusion of quassia with about half an ounce of compound tincture of cardamoms, a drachm or two of aromatic spirit of ammonia, and half a drachm of bicarbonate of potash, appears to answer the purpose in ounce doses. Nutritive food, of easy digestion, should be given in moderate quantity, instead of the gelatinous broths and preparations of starch and sugar often given, and very appropriately called "slops." Even a small quantity of wine or other alcoholic beverage should not be denied to persons in the habit of taking them at or after dinner. All this, however, must be done according to symptoms, state of general health, and habits.

"Wounds or other injuries of the eye, whether accidental, or inflicted in operations for cataract or artificial pupil, are often followed by general inflammation of the eyeball, not very different from simple inflammation from exposure to cold, commonly called idiopathic iritis, and sometimes, as I have already observed, modified by constitutional disease or derangement of the nutritive functions. There will be the sclerotic vascularity, marginal opacity of the cornea, discoloration of the iris, contraction and adhesion of the pupil, cataract, and amaurosis, as in other forms of inflammation of the eyeball; and all this may be varied in appearance or consequences, according to the state of the system at large. It may assume the scrofulous or rheumatic character, or it may display peculiarity of nature by its rapid progress and intensity, or by its slow and disorganizing operation: in fact, it differs so little in symptoms and consequences from the other forms, that it is unnecessary to repeat what has been so often stated respecting treatment. It is sufficient to observe that bleeding, diminution of food, mercury, and so much of purgative medicine as may be necessary, are to be made available according to circumstances, and in proportion to the activity and peculiarities of the disease; while bark, iodine, iron, and other tonics and alteratives, are reserved for the subsequent stages. If the inflammation be of the simple or ordinary form, and the patient in good health, the treatment will be equally simple, and sufficiently obvious. Depletion by abstraction of blood and denial of nutritious food will, of course, be necessary, and should be carried into effect according to the amount of the injury, and the strength of the patient; but it should not be persevered in so as to interrupt or arrest the salutary processes of reparation. A single bleeding to lower the heart's action, and to diminish the activity of the capillary circulation, will, perhaps, be sufficient, followed by leeching in the vicinity of the part, if the symptoms and progress of the inflammation require it. The contents of the alimentary canal should be removed by opening medicine, but the continued administration of purgatives, as sometimes practised, cannot be necessary or beneficial. The quantity of food should be diminished, and its nutritious properties should, perhaps, be less than is required in a state of health, but it should not be composed of materials incapable of affording blood of healthy quality, such as any of the varieties of starch or gelatinous broths. I have already so often suggested the necessity of carefully adapting the administration of mercury to the nature and intensity of the inflammation, and to the constitutional peculiarities of the patient, that it is unnecessary to return to the subject here."

[During the discussion to which the reading of this paper gave rise, Dr. Jacob made some explanations, which it is important should be introduced here.]

Dr. Jacob stated that, with respect to the position of the lens, and the mode of dealing with it when protruded, he did not think he had made himself sufficiently intelligible. What he desired to convey to the Society was this: that where an aged individual, with a hard lens, received a severe injury of the eye (say a blow or a lacerated wound), and that the lens lay in the anterior chamber, it was the duty of the surgeon to endeavour to get it out of that position, either with the needle or the extracting knife. He would even advise that the lens should not be allowed, in any case, to remain for a moment in the anterior chamber, whether hard or soft, as in younger subjects it immediately swelled up from imbibing the aqueous humour, so as to cause a terrible amount of pressure upon both the iris and cornea, rendering extraction indispensable. In other cases, however, where the protruded lens was sufficiently hard, he wished he could induce the profession to operate more frequently than they did; for he could see no difficulty in passing the needle through the cornea, and pushing back, reclining, or depressing the lens, so as to place it entirely out of the way. But what he desired to be understood most was, that if the lens was left in the anterior chamber until inflammation had set in, the bad consequences would be so great, that the total loss of the eye would probably follow. With reference to the use of depletion, he had likewise been misunderstood; for he never meant to say that where the patient was strong and plethoric, there should not be a copious extraction of blood. He merely stated, that where the patients suffered from deranged digestion, vitiated hepatic secretions, &c. &c., he thought it better to rely upon setting up a circulation of good blood in their bodies, so as to improve their general health, than to resort to the contrary practice of draining their systems of the blood already contained in it. With reference to the liability of injuries of the cornea to be followed by abscess, he wished to say that very minute injuries and ulcers of it were sometimes succeeded by abscesses of a most formidable character; but it was a mistake altogether to suppose that he had directed his observations, in the treatment of such abscesses, to small ones as well as large. His statement was, that if the anterior chamber was filled to distension with matter, and the abscess was large and pointing, that then the sooner the surgeon opened it the better: but he need hardly observe, that he never had been in the habit of puncturing the small collections called hypopion, or the patches of matter diffused or infiltrated in the structure of the cornea. With respect to the touching of the prolapsed iris with nitrate of silver, he was aware the practice was very general; but when one person proposed a plan, and advocated its utility, he did not see why another individual, who thought he knew a still better species of practice, should not make it known. With reference, therefore, to the plan he advocated for the treatment of this condition of the iris, he would content himself with observing, that his patients got on at least as well under its employment, as under the use of the nitrate of silver.—*Dub. Med. Press*, Jan. 1849.

---

41. *Ocular Apoplexy.*—In the *Journal de Médecine et de Chirurgie Practiques*, for January 1849, a case is recorded as having occurred in the practice of M. Malgaigne, at the Hôpital St. Louis, in Paris, in which the patient (a little sweep, under treatment for fracture of the radius) was seized with dazzling and loss of sight. M. Malgaigne attributed this sudden blindness to apoplexy of the ocular nervous system, and prescribed fifteen grammes (about four drachms) of a compound tincture of jalap, and mustard pediluvia. In three days, sight was restored.

These nervous apoplexies of the eye differ from sanguineous apoplexies, in the absence of any obvious alteration in the appearance of the diseased organ; the dilated pupil alone revealing the injury. In sanguineous apoplexy, on the other hand, the globe of the eye presents the appearance of an effusion of blood, or of a scorbutic ecchymosis. M. Malgaigne has met with two or three cases at the Bicêtre, in which old persons in good health, and without any headache, were struck with blindness during the night, so that, in rising on the morning, they were, to their great surprise, incapable of distinguishing anything. In these cases, where the eye was red and somewhat painful, the blindness continued. This result is worthy of notice, for the functions of the eye are sometimes regained in apparently much more unfavourable conditions. As an instance of this, M. Malgaigne has seen an old man, one of whose eyes had been crushed without laceration of the cornea. The organ seemed entirely destroyed; so much so, that the patient brought an action against the person who had injured him, and gained a verdict with damages. However, at the end of a year, light began to appear, and the patient finally recovered his sight. An interesting case, bearing on this point, will be found recorded at page 586 of this *Journal.—Lond. Journ. Med.*, June 1849.

42. *Case of Traumatic Lesion of the Globe of the Eye.*—Dr. Rivaud Landreau, of Lyons, relates the following remarkable case in the *Gazette Médicale de Lyon* for 14th February, 1849: On the 14th of August, 1847, Madame Peyronnier, a portress, in endeavouring to separate two men who were fighting, received from one of them a blow with the fist in the left eye. The immediate consequence was abolition of vision, and the production of a swelling at the internal angle of the eye; this was followed by ecchymosis of the membranes of the globe and of the palpebral tissues. Severe pain was at the same time felt in the injured organ. Medical assistance having been immediately procured, leeches were applied around the orbit, and cold lotions to the eye; and an opiate mixture was ordered. Some days after, a purgative was administered, and a blister applied behind the right ear. These means having produced no relief, the patient consulted M. Landreau, on the 21st of the month. On examination, he found, at the internal angle of the eye, close to the junction of the cornea with the sclerotica, and very near the centre of the palpebral opening, an ovoid tumour, of the size of a round pea, with a reddish base, and a slightly flattened summit, presenting a well-marked yellowish tint. Entirely surrounding the base of the tumour, was a large violet-coloured ecchymosis, embracing the whole of the larger angle. In the anterior chamber, at its inner and lower part, were some drops of florid blood. The *tomentum* covering the anterior surface of the iris was dull and grayish; and, towards the lower part, and a little internal to this membrane, there was a partial laceration of the iris, of about the size of a millimetre (about one twenty-fifth of an inch), having the form of a reversed V. The pupil was dilated to about double its usual dimensions, black, and perfectly immovable. Vision was destroyed, from amaurosis. The transparent cornea was healthy, and the deeper humours of the eye appeared to be uninjured. The sclerotic and conjunctiva, at the smaller angle, showed no vascular injection; the eyelids had the yellowish tint which usually follows bruises. The patient complained of violent pains in the injured organ, and in the whole of the corresponding side of the head. The tumour before described felt hard and resisting, but gave a sensation of slight fluctuation at the summit; which, with its yellowish tint, indicated the presence of pus. M. Landreau, however, hesitated to open it, being uncertain as to its nature; and, on attentively examining the globe of the eye, he thought he perceived the absence of the crystalline lens, from an unusual depth of the posterior chamber, together with an oscillatory movement of the iris. Hence he imagined, that the blow on the eye might have produced rupture of some of the fibres of the sclerotica, and thereby occasioned an aperture sufficiently large to allow of the escape of the crystalline lens. It was probably, then, this latter body which produced the tumour under the layer of the conjunctiva. Acting on this hypothesis, he made a small opening over the tumour with a cataract knife. A drop of pus escaped, and he drew out at the end of his instrument a body, which he recognized as the crystalline lens, in an entire state. The tumour

immediately disappeared; and there only remained some puffiness of the conjunctiva. The eye was ordered to be kept wet with cold lotions, and a purgative to be taken the next day. The patient was completely free from pain at the end of forty-eight hours, and there was little or no consecutive inflammation. The ecchymosis followed the usual course; and, in about eight days, all traces of it, or of inflammation, had disappeared.

The permanent effects of the injury have been perfect immobility of the pupil, and mydriasis, both resulting from the injury of the iris, which has resisted all means tried to remedy it. The laceration still exists, but is somewhat smaller. The retina has, under the influence of stimulant remedies, so far recovered its power as to enable the patient to see with the aid of cataract glasses.

M. Landreau explains the phenomena of this case by supposing, that the blow on the eye was perpendicular, and in a direction from the temple towards the nose. Its immediate effect was the violent compression of the globe, and the crushing of the humours from without inwards. The sclerotic at the inner angle was forcibly compressed against the bony floor of the orbit, and its fibres were thereby distended and torn. Then the crystalline lens, violently detached from its suspensory ligaments, was forced through the laceration in the sclerotica; and, by the motion of return of the humours from their state of compression, was lodged under the conjunctival membrane. The violence of the blow also explains, in a very natural manner, the rupture of the ciliary attachments of the lower part of the iris, and the partial laceration of that membrane. The effusion of blood in the anterior chamber no doubt arose from the rupture of some of the vessels of the iris, when it was lacerated. It is also evident that the instantaneous paralysis of the retina, and the mydriasis, were effects of the compression and of the blow. There are two remarkable circumstances in this case: *first,* the absence of acute ophthalmitis, either external or internal; and *secondly,* the complete restoration of the function of the retina, after such a sudden and complete amaurosis.—*Ibid.*

MIDWIFERY.

43. *Iodine in Congestion and Erosion of the Cervix Uteri.*—Dr. Churchill, in a communication to the Dublin Obstetrical Society, stated, that after the elaborate work of Dr. Bennett, and the excellent paper of Dr. Evory Kennedy, it would be superfluous for him to enter into a description of congestion and erosion of the cervix uteri. He quite agreed with those writers as to its being much more frequent than was heretofore believed, and, also, that it is neither easily detected nor easily cured without the use of the speculum. At the same time, he thinks it neither necessary nor becoming to propose an examination with this instrument in every case of vaginal discharge; a degree of delicacy and discrimination should always be exercised. This is particularly necessary with nervous women. The author has known irremediable mischief result from neglecting this consideration. Again, if it be possible to avoid it, he should consider it wrong to propose an internal examination to an unmarried female. In accordance with these views, whenever he is consulted for a whitish or yellowish vaginal discharge, or for leucorrhœa, Dr. Churchill always makes an attempt to cure it by general means, such as blisters to the sacrum, balsam of copaiba, ergot of rye, &c., with local baths of cold water or astringents. Many cases are thus cured; but if he fail, he thinks it fair to assume that there is either congestion or erosion, requiring other local treatment, and in the majority of cases he has found this to be so. The usual application is nitrate of silver, acid nitrate of mercury, nitric acid, chloride of zinc, all of which he has repeatedly tried with great benefit; but it occurred to him (Dr. Churchill) that caustic iodine would probably answer better than any of these singly, inasmuch as it possesses sufficiently strong caustic properties, and, in addition, would be likely to act beneficially in reducing the enlarged cervix. The preparation Dr. Churchill employs is of the following strength:

℞.—Iodinii ʒj, potassæ hydriodatis ℥ij, aquæ destillatæ ℥ij, spiritus vini ℥ij, and, after four or five years' trial, he can truly say that he has found it the best application for congestion, erosion, or superficial ulceration, of all that he has tried. Dr. Churchill usually commences with a single application of nitric acid, or the acid nitrate of mercury, and then, after a few days, he paints the entire cervex with the iodine. This must be repeated once or twice a week, but not oftener; for whenever he has attempted its more frequent use, he has found the uterine irritation rather to increase than diminish; and this will probably explain why these trifling complaints take so long a time to cure. Dr. Churchill had seldom succeeded in less than two months if the congestion was considerable, and many cases have required a much longer time. The application occasions no pain at all, unless the orifice of the vagina should be touched by the caustic, which may happen if it be applied too profusely. In one case the patient complained of a metallic taste in her mouth, in five minutes or less after each operation. After one or two applications, the cervix will generally be found to have diminished in volume, to have lost its tenderness, and the eroded surface to have lessened in extent, and to have assumed a more healthy appearance. Dr. Churchill strongly recommends that the application of the iodine should not cease abruptly, but first be diminished in frequency, then left off, and resumed if, as is very common, any of the symptoms return.—*Medical Times*, May 19, 1849.

44. *Tincture of Indian Hemp in Sanguineous Uterine Discharges.*—Dr. Churchill is indebted for the knowledge of the utility of this medicine to Dr. Maguire, of Castleknack, who had discovered its value in this class of cases by accident. Dr. Maguire had prescribed a small dose of the tincture of Indian hemp for a poor woman laboring under some form of neuralgia; and on inquiring into the effects, a few days afterwards, the patient declared that it had cured both her complaints; and then, for the first time, informed Dr. Maguire that she had been suffering from menorrhagia. This led him to try it in some similar cases, and finding equally satisfactory results, he mentioned the fact to Dr. Churchill, requesting him to try it, which he has done extensively. Dr. Churchill mentioned it to the late Dr. Hunt and other friends, and the remedy, he believes, has had a pretty fair trial; and if their experience (as he believes) confirms his, the profession has reason to congratulate itself upon the addition of a most valuable remedy for a class of diseases whose materia medica has been hitherto very limited. The largest class of cases in which Dr. Churchill has found the most unqualified benefit are those of menorrhagia, where the discharge, though excessive, is fluid, and but little mixed with clots, and when the uterus is not enlarged. In many such cases, five drops of the tincture, three times a day, have stopped the discharge in 24 or 48 hours. When there is pain, too, if it be not excessive, relief is obtained without the addition of another anodyne. In other cases, when the discharge, whether too much or not, has returned too frequently, Dr. Churchill has succeeded in arresting or postponing it to the proper period by the tincture, just as can be done by means of ergot of rye. In those cases of menorrhagia, when the uterus is much congested and enlarged, and where the discharge is largely mixed with coagula, although it has succeeded in many cases, yet it has failed in other instances, and the success in some has been incomplete. Nevertheless, even in these, it is of great value; and finding that it possessed power even over uterine hemorrhage, it occurred to Dr. Churchill to try it in threatened abortion at an early period of the attack, when the hemorrhage was slight, and the pains rare and weak. In such cases, ergot of rye is out of the question; lead has but little power. Opium, and cold applications, and quiet, are our principal remedies, but they often fail; and, therefore, the addition of a direct and powerful agent, which should combine an astringent with an anodyne, would be a valuable acquisition. Dr. Churchill has now tried it in six or seven such cases, and he has found that, when employed sufficiently early, it succeeded remarkably well, but that at a later period it failed partially or wholly. Lastly, Dr. Churchill has tried it in three cases of cancer, at a tolerably early period. He gave it on account of continued draining of blood,

not to any great amount, and thought that perhaps its anodyne quality might to a certain extent supersede the use of opium. He does not think that these cases are sufficient for any definite conclusion as to its value; but the results will certainly induce him to repeat the trial. He does not for a moment suppose that it or anything else will permanently arrest the downward course of cancer, or that the hemorrhage will not return; but every degree of success, however temporary, every relief, even though slight, is of great value in these cases. Dr. Churchill does not pretend to explain its *modus operandi;* he can only say, that it appears to exert an astringent power in hemorrhages from mucous surfaces, and, also, to have a sedative or anodyne effect. The preparation he has invariably used is Mr. Donovan's tincture of the resin. He begins with five drops three times a day, in a few cases increasing it to ten, but seldom more. The effects are very soon seen, generally in twenty-four or forty-eight hours, often much sooner; nay, in some cases mentioned to Dr. Churchill by Dr. Hunt and Dr. Maguire, the effect was instantaneous. In some cases, the beneficial effect was accompanied by a slightly unpleasant feeling in the head, resembling that from an extra glass of wine. In one case only has Dr. Churchill seen any more disagreeable results; but in that, five drops produced an extraordinary degree of nervousness and a sense of sinking, almost of dying, which gradually passed off.—*Ibid.*

---

45. *Absence of Urea in the Liquor Amnii and Fœtal Urine.*—Dr. A. H. McClintock was led to the present investigation by the examination of a fœtus born at the full time, and which had died immediately after its birth. The vesical extremities of both the ureters were imperforate, and the ureter on the right side was so dilated as to contain not less than a pint and a half of urine. This case, though not unique, shows (in opposition to the generally received opinion) that the secretion of urine is already commenced before the birth of the infant. Similar cases are described by Dr. Lee, Dr. Fearns, and Dr. Montgomery.

The researches and experiments of Drs. Prout and Bostock, of Frommhertz and Gugert, and of Dr. Rees, would lead us to believe, that in some cases a small quantity of urea is, sometimes at least, contained in the liquor amnii. But this evidence is more than counterbalanced by the researches of Berzelius, Raspail, Mack, Colberg, Veigt, Prout, Lassaigne, and Moore, all of whom agree in thinking that no urea is normally contained in the liquor amnii.

Here, then, are two classes of facts, seemingly in opposition to one another; viz. first, the undoubted proofs of urine being secreted by the fœtus in considerable quantity before birth; and secondly, the complete absence of urea in the majority of instances where the liquor amnii was subjected to accurate chemical analysis. In order to reconcile these discordant conclusions, it becomes an object of the utmost importance to ascertain the composition of the fœtal urine, as, hitherto, observers appear to have taken it for granted, that the renal secretion possessed the same chemical characters during intra-uterine life, as it does after birth.

Further experiments by Dr. Moore seem to justify the conclusion, that the urine of the child before birth differs in its chemical constitution from that secreted subsequently, in two very remarkable particulars, viz. first, in containing a large quantity of albumen; and secondly, in being almost or altogether deficient in urea. Hence, none is to be looked for in the liquor amnii, although it is in all probability mixed with a large quantity of urine passed by the fœtus during its intra-uterine life.

The liquor allantoidis of some of the lower animals, the cow for example, is considered to be the urine of the fœtus; but although it has several times been the subject of chemical investigation, urea has not as yet been detected in it, and albumen has always been found present. This would seem to give additional confirmation to the results we have obtained in our examinations of the fœtal urine of the human subject. According to the views of Liebig, the peculiar substance called *allantoin* appears to replace both urea and uric acid in the urine of the fœtus of brutes; it would, therefore, be an interesting subject for further inquiry, to ascertain whether this or some analogous product be present in the urine of the human fœtus.—*Monthly Retrospect,* June 1849, from *Dublin Quarterly Journ.*, Feb. 1849.

46. *Urethritis in the Female.*—Dr. M'Clintock detailed to the Dublin Obstetrical Society, March 1, the histories of two cases of urethritis in females. One of these patients was a lady in the fourth month of her twelfth pregnancy, who had been suffering from this affection of the urethra for two months, and had tried a variety of means for its removal, prior to his seeing her. The other patient was a poor countrywoman, who had given birth to five children, three of whom were removed by craniotomy, in consequence of a large osteo-sarcomatous tumour within the pelvis. The symptoms in both cases were nearly identical, and were as follows: Intense burning pain during each act of micturition, accompanied with much straining and bearing down. There was no discharge from the vagina, nor any evidence of disease of this canal, or of the uterus. The urine of each, examined in the ordinary way, seemed healthy and free from albumen. Looking at the meatus urinarius, the mucous membrane of the canal was seen to be in a highly vascular and swollen condition, so as to form a considerable tumour at the orifice. This, when touched, was exquisitely sensitive. Having satisfied himself as to the pathological state of the parts, he commenced the treatment. In the first case, he began by trying astringent local applications, such as alum, zinc, and lead washes; and these failing to produce any beneficial effect, anodyne lotions of various kinds were next used, but with no better result; lastly, he applied directly to the part a strong solution of lunar caustic, but neither did this bring about any improvement in her condition. It then occurred to Dr. M'Clintock to make trial of copaiba, which we know exercises a very marked influence upon the mucous membranes generally. He accordingly commenced with three capsules of the balsam in the day, and increased the number to four per diem. This treatment at once produced the most decided improvement; so that, after she had taken eighteen capsules, she was entirely freed from her torturing complaint.

In the second case, the complaint was of six weeks' standing, and, without waiting to try the effects of any other remedies, he at once commenced the use of copaiba capsules in the manner just described, and with a like satisfactory result, as a perfect cure was established before she had finished the contents of the box. A subsequent examination of the urethra, showed that it had re-acquired its natural healthy characters. In commenting upon these cases, Dr. M'Clintock very clearly pointed out how they differed in their symptoms and pathological nature from gonorrhœa, from vascular tumour of the meatus urinarius, and from thickening of the cellular tissue surrounding the urethra—a disease first described by Sir C. M. Clarke. Lastly, he alluded to Dr. Ashwell's chapter on "Chronic Urethritis," in the last edition of his treatise on female complaints, which is the first work containing a description of it. The extremely incontrollable nature of the disease described by Dr. Ashwell, which almost set any treatment at defiance, inclined Dr. M'Clintock to entertain suspicions as to whether the cases he met with could have been of the same nature as his; and yet, that they really were instances of inflammation of the urethra, he established beyond any manner of doubt. In order to reconcile these conflicting results, he could only suppose that the form of the complaint seen by him was of a milder and more tractable nature than had come under Dr. Ashwell's care; or else that the inflammation had been limited to a part of the canal only.

Up to the present time, both the above patients have continued in excellent health, and had no return of their truly painful malady.—*Med. Times*, March 10, 1849.

---

47. *Puerperal Tetanus.*—According to Dr. Pirre-Aubinais, there exists a traumatic puerperal affection distinct from what is ordinarily called puerperal eclampsia. It is characterized by clenching of the jaws (trismus), difficulty or utter incapability of swallowing, contraction or convulsive tension of certain of the muscles, and sometimes of all the voluntary muscles together. This rare affection it is proposed to call puerperal tetanus. It comes on spontaneously, generally soon after the supervention of the milk flow, and in women who ought not to nurse. M. Aubinais has observed it only in women in the country, and where the lochiæ, as well as the cutaneous transpiration, have been arrested

by the sudden influence of cold and damps—as by plunging the feet into cold water, walking barefoot on damp ground, or swallowing at once a large quantity of cold water.

Of three cases which M. Aubinais has seen, the affection proved fatal in one. The treatment resorted to, consisted in the use of antiphlogistic remedies and narcotics. In one of the cases, where the woman appeared to be under the influence of the poison of ague, quinine was exhibited with advantage.—*Month. Retrospect,* June 1849, from *Journ. de la Societé de Médecine de la Loire Inferieur.*

48. *Expulsion of a Bag of Waters before the Rupture of the Membranes.*—Dr. Alexander Wood narrated to the Edinburgh Obstetric Society (Feb. 14, 1849) a case which had lately occurred in his practice. On the 8th of February he received a hasty summons to attend a patient whose accouchement was not expected for a month, but who was suffering from a severe attack of pneumonia. Labour pains had lasted about two hours before he saw her. It was her fifth pregnancy. On making an examination, he discovered a membranous sac protruding from between the labia, which he thought consisted of the membranes. On pressing this up, however, during the interval between the pains, he could not reach the head on account of the interposition of fluid, which could not be removed by pressure. The next pain expelled this membranous body, when it was found to present a pyriform appearance, ending in a long neck, the extremity of which could not be reached by the finger. A double ligature was applied to the neck, which, being severed between the ligatures, the sac was removed entire, with the fluid which it contained.

In size, it was capable of holding about six ounces of fluid. It burst in handling it, and discharged a clear, limpid fluid. The membranes were found at the next examination presenting as usual, and the case terminated naturally, about an hour after the expulsion of the sac.

Both mother and child did well, although the latter was small and weakly.—*Monthly Journal,* June 1849.

49. *Twins born at an interval of twenty-one days.*—A woman, 35 years of age, was confined on the night of the 30th of March, 1848. The placenta came away without difficulty. The size of the abdomen remained very considerable; the lochia did not flow, and, nevertheless, the surgeon did not conceive the possibility of another child.

Dr. Prival, of Bedarrieux, was called in, and at once ascertained the presence of a second child. The one already born was full-sized, healthy, and took the breast with avidity. The mother would not remain in bed; she arose and occupied herself with her usual household cares. Twenty-one days after the birth of the first child, labour-pains again came on, and another child was born, as strong and healthy as the first.—*Med. Times,* May 26, from *Union Médicale,* May 17, 1849.

50. *Case in which the Liquor Amnii and the Meconium were both bloody.*—Dr. Moir communicated to the Edinburgh Obstetric Society (Jan. 10, 1849) the following case: In July 1848, a lady, then at her full period of pregnancy, had suddenly and without warning a discharge of fluid per vaginum, so copious as to run in a stream along the floor, after passing through her clothes and the chair on which she was sitting. From its colour it was supposed to be blood; she was consequently put to bed, and Dr. M.'s immediate presence was requested. On his arrival, he found that during each pain there was a gush of dark, bloody-coloured fluid, but as it did not coagulate, and as the pulse was not affected, he inferred that it was the result of some abnormal state of the liquor amnii, and therefore allowed the case to go on without interference. In about an hour a full-sized, healthy female child was born. The placenta, which still continued attached at the time of birth, soon separated, and appeared to be perfectly healthy.

Previous to the infant's being finally separated from the mother, it passed some meconium, and Dr. M. was surprised on observing that it was of a very dark red colour, and that on being wiped off the sheets it left a reddish stain.

On paying his visit next morning, the nurse, in great alarm, showed him several cloths containing meconium of the same appearance, but as the child seemed in every other respect healthy, nothing was administered but a small teaspoonful of castor oil, which brought off a good deal more during the day and evening. Next day the stools gradually assumed a healthy appearance, and have continued so. The child is healthy and well.

The first question that suggests itself in this case is—Whence the bloody liquor amnii? Was it from the intestines of the child, or from the uterus, or its membranes? Most probably it was from the latter, because, had it been from the child, we should have had some appearance of blood in the stools after the whole of the meconium was discharged; but there was none. But in his opinion the most interesting question, in a physiological point of view, is—Whence the bloody meconium? because, if correct in the former supposition, the fœtus in utero must have swallowed the bloody liquor amnii, and this must have undergone the process of digestion. Are we therefore to infer, that the liquor amnii is always or occasionally one of the sources from which the fœtus derives nourishment. The general opinion hitherto has been, that it does not, but the present case seems to favor the conclusion that it does.—*Monthly Journal*, April 1849.

---

51. *On Prolapsus Uteri.*—Professor Hohl believes that some very erroneous notions prevail as to the *causes* of this occurrence, and that some light may be thrown upon the subject by considering the changes of position which the uterus normally undergoes at different periods of life. In the mature fœtus, the uterus projects considerably beyond the pelvis: and it is only when it has acquired its completed shape and size at puberty, that it is found entirely within the cavity. At the commencement of the menstrual cycle it retains its position, or even rises still higher in the pelvis, while at the termination of this it again sinks, with the loss of blood, in stout young women. In women who seldom or never bear children it sinks still deeper, as it does too, after the menstral functions have ceased. In pregnancy the organ rises remarkably, and M. Hohl denies the correctness of the statement that it sinks lower in the pelvis after the second month, the apparent sinking being due to the turgescence of the organ, and especially of its cervix. After delivery the uterus remains high up in the abdomen, and only gradually resumes its ordinary position. In old women it is found deep in the pelvis.

The production of prolapsus is not dependent upon the condition of the vagina, and the ligaments of the uterus. The vital power of the organ may be said to maintain it in position. When this is augmented the uterus is raised, while, when it is diminished or lost, it descends. Other organs, and indeed the whole body, in like manner exhibit strength and power proportionate to their *turgor vitalis.* The increase of the vital activity of the uterus during its development and growth, as also during menstruation and in pregnancy, is attended with elevation of the organ, which sinks again when these conditions prevail no longer. So far from allowing that the prolapse results from defective supporting power of the vagina, we may rather regard the uterus as supporting the vagina, and prolapsus of the latter may occur without any prolapsus uteri.

Thus the author refers the production of prolapsus to a preceding or co-existing condition of health, giving rise to a diminished vitality. This explains why we so seldom meet with the disease in young healthy women; while we know that whatever favours the relaxation of the genital system, and lowers the tone of the fibre, acts predisposingly—the germ of the evil being found in the puerperal condition, when the uterus, after having been high up in the abdomen, sinks down into the lesser pelvis.

Although prolapsus may be secondarily produced by other affections, as tumours of the belly, prolapsus vaginæ, cystocele, &c. &c., yet far more frequently a change in the direction, rather than in the position of the organ then takes place; and, even while the portion of the rectum in connection with its posterior wall may prolapse entirely, the uterus may retain its normal position.

There may be a diseased condition of the economy in general, or of the uterus in particular, upon which depends this extinction or diminution of its vital power; and accordingly as this is or is not curable, will depend whether the cure of a prolapsus is apparent or real; as mere reposition with mechanical support is not a cure. In some diseases which are attended with an increased activity of the uterus, there is a rising of the organ in the pelvis, as puerperal fever, hydrometra, &c. Disease of the ovaries does not produce any sinking of the organ; nor do tumours or indurations of its substance as long as they are in process of development, nor until they have interrupted its functions, or weighed it down by their great bulk. Polypi also seldom gave rise to prolapsus.

Treatment. Common as is the disease, a radical cure is seldom accomplished. The indications are to remedy the defective or disordered condition of the general vital powers, or of those of the uterus in particular. The author especially warns us against the continued use of injections, and the too early employment of pessaries. When the vital power of the sexual system or uterus is exhausted in consequence of age, over-stimulus, or incurable disease, mere palliative treatment should be employed.—*Brit. & For. Medico-Chirur. Rev.*, from *Zeitschrift für Gebertskunde,* Band xxiv. pp. 321–340.

---

52. *Case of Hydrometra occurring in an Unimpregnated Uterus.* By Dr. GRANDIDIER.—This case occurred in the person of D. F., æt. 21, unmarried, and of a scrofulous habit of body. In Nov. 1842 her menses, which had been very irregular, were arrested, and the belly began to swell, so that in twelve weeks it resembled that of a pregnant woman in her last months. The distension was as equable as in ascites, but a fluctuation was only very obscurely felt. The extremities were swollen, respiration hurried, and the amount of urine small. Examination, *per vaginam,* having proved the groundlessness of the charge of pregnancy, she was treated by various hydragogues, &c., as for ordinary ascites; and it was not until paracentesis had been in vain attempted that a hydrometra was diagnosed. Ten grains of *secale cornutum* were now ordered every two hours, until uterine action was developed. Great pain and anguish were thus produced, which continued for twenty-four hours, when (one hundred and twenty grains of secale having been taken) a small plug of mucus was expelled from the vagina, and followed by the uninterrupted flow of six *maas* (sixty-four ounces) of a clear, watery fluid. The patient's sufferings were much relieved; her general condition improved; and while taking Stahl's pills her menses returned. Still her belly never resumed completely its normal size, and at intervals, varying from one to three weeks, there were gradually expelled other eighteen maas of the same fluid. In June, 1843, she repaired to the sulphureous waters at Nenndorf, the belly being as large as in advanced pregnancy; and, the menses again disappearing, ten maas of fluid were discharged from the vagina. In August, seven maas; and in September, thirty-nine were discharged; but after this period, the mineral waters and other means employed having removed the deranged condition of the digestive organs under which she had long laboured, and the discharge of water, *per vaginam,* which had probably accumulated during the stasis of the venous abdominal circulation, entirely ceased.—*Brit. & For. Medico-Chir. Rev.*, April 1849, from *Neue Zeitschrift für Geburtskunde,* Band xxiv. pp. 261–8.

---

53. *Prolapsus of the Funis during Labour.*—Dr. HOFFMAN does not admit the validity of the explanation of this occurrence, which refers it to a disproportionately large pelvis or small head. If this were the case, the accident would be met with far more frequently than it is, and especially during premature labours. He believes it to be dependent upon an irregular contraction of the uterus, whereby the lower segment of the organ becomes unduly relaxed. He has never met with it in cases in which the pains have manifested their normal activity, but only in those in which they have assumed a spasmodic character. Upon these grounds he declares the mere reposition of the funis, unless the character of the pains can also be changed, to be of no avail; for the lower segment of the uterus not being applied to the head in these irregular pains, as it should be, the prolapsus is sure again to recur.

Moreover, the reposition of the funis is opposed by a general law which, however easily demonstrable, the author does not recollect to have ever seen stated. It is, that *when during the progress of labour any portion of the ovum has quitted the cavity of the uterus, it can never be replaced.* As soon as any of the liquor amnii is discharged, the walls of the uterus become closely applied to the contour of the child, and the size of its cavity *pro tanto* diminished. Just in proportion as the parts of the child quit this cavity, does its size continue diminishing, and neither a spontaneous nor artifical return of these is possible. So it is with the funis; the cavity of the uterus having diminished in size since its descent, there remains no longer room for it. The general conclusion to be drawn is, that when the funis is prolapsed, to save the child, we must resort to turning, and place no reliance on the various instruments which have been contrived for its replacement.—*Ibid.*, from *Ibid.*, Band xxv. p. 45.

54. *Spontaneous Rupture of the Uterus—Recovery.*—James Church, Esq., has communicated to the *Lancet* (May 19) a case of spontaneous rupture of the uterus, in a corpulent woman 42 years of age, during her tenth labour, in which recovery took place. The rupture extended from near the fundus towards the left side, through which the child escaped. Mr. C. introduced his hand into the uterus and delivered the child, which was dead.

55. *Subacute Inflammation of the Ovaries and of the Fallopian Tubes as one of the Causes of Sterility.*—Dr. Tilt read a paper before the Westminster Medical Society (April 28) on this subject. After dividing the causes of sterility into those which are self-evident, those which are disputable, and those which are of a mysterious nature, Dr. Tilt drew the attention of the Society to subacute ovaritis as a frequent cause of sterility. He founded this assertion—

I.—On physiological data.
II.—On the testimony of authors.
III.—On the cases which he brought forward.

He began by establishing the paramount importance of the ovaries in the hierarchy of our organs, showing that the anatomical phenomena of ovulation were identical to those termed inflammatory, and thus led us to believe that in morbid ovulation the healthy process might often pass into the inflammatory, and furnish a satisfactory explanation of the increase of pains and of heat in the ovarian regions—symptoms so frequently met with in difficult menstruation. He considered that subacute inflammation of the ovaries might produce all those symptoms which are called by the common name of dysmenorrhœa, although they may also depend on the disorder of other organs. He also admitted that the symptoms of subacute ovaritis might vary according to the nature of the patient's constitution, producing hysterical symptoms in nervous and highly excitable females, and morbid products and sterility in those of a strumous constitution.

II.—Dr. Tilt proved, by the testimony of authors, the frequency of unaccounted-for ovarian lesions; and as these lesions are admitted by all to be the products of inflammation, he drew, as an evident conclusion, that the ovaries and their peritoneal covering were frequently subjected to inflammation, though not recognized as such during the patient's life, nor treated accordingly. Respecting the production of dysmenorrhœa, Dr. Tilt admitted, that in some instances all the symptoms of that disease were produced by subacute ovaritis, while in others, as it has been well established by Dr. Oldham, ovaritis determines dysmenorrhœa by the inflammatory congestion of the uterus to which it gives rise; but he did not agree with Dr. Rigby that membraniform exudations in the catamenia were always the proof of ovaritis. Having thus established that subacute ovaritis is a frequent cause of dysmenorrhœa, Dr. Tilt observed that dysmenorrhœa and sterility being admitted as concomitant facts, depending on each other, or on the same cause, he had a right to infer that subacute ovaritis was a cause of sterility, and that this imperfection was the result—

1. Of morbid lesions of the stroma, or of the vesicles of the ovula therein contained.
2. Of a false membranous deposit lining the ovaries, so as to preclude the exit of the ovula.

3. Of lesions in the tube destined to convey the ovula to their uterine abode. He likewise stated that sterility was sometimes produced by the uterine extremities being blocked up by a glutinous deposit, and asked—whether there was any possibility of doing for these organs what Mackintosh and Simpson have done in similar cases of temporary occlusion of the neck of the womb.

In concluding the enumeration of morbid lesions, Dr. Tilt remarked that as our physiology of the ovaries dates only from yesterday, we need not be surprised if the knowledge of their pathology is also in an embryotic state.

III. The paper was concluded by Dr. Tilt's giving three cases in which the diagnosis of the disease was fully confirmed, by an accurate examination of the patient through the rectum, and wherein the treatment recommended brought on the cessation of sterility after it had lasted five, six, and seven years. The remedial measures prescribed were leeches, to diminish the chronic ovarian congestion; blisters, to break the chain of a morbid nervous action, fostered by long habits of suffering; mercurial ointment, combined with narcotic extracts and camphor, to reduce pain and vascular action; and medicated enemata were administered with the same intention.—*Lancet*, May 5.

---

56. *Cases of Sudden Death after Delivery.*—Dr. McCowan stated to the Edinburgh Obstetric Society (Jan. 10), that on the 16th June, 1845, he was requested to visit Anne Barker, æt. twenty-one, stated to be in labour with her first child. On his arrival, he found her suffering from spurious pains, and complaining much of difficulty of breathing, and pain in left sub-mammary region. The face was very œdematous, as also the lower extremities. Under the usual treatment the pains subsided. During the two following days she complained occasionally.

On the 19th she had much pain in her side; respiration laborious; pulse, which had hitherto been about 70 to 80, rose to 120, but feeble. Venesection to ten ounces produced faintness, without alleviating the pain. She was then cupped to four ounces, with immediate relief.

About three A. M. of the 20th, labour commenced, and proceeded naturally and speedily till nine A. M., when she was delivered of a still-born male child, and instantly expired.

Post-mortem.—The body presented a generally œdematous appearance.

On opening the thorax, the pericardium was found distended with a dark fluid. The heart was much enlarged, extending about two inches to the right of the sternum. Right ventricle very thin and dilated. The aortic opening could with difficulty admit the point of the little finger; its valves were hard and cartilaginous. The whole heart was filled with coagulated blood. The surfaces of the pleuræ were strongly adherent; the greater part of the left lung was hepatized. The uterus and other organs seemed healthy.

Dr. Simpson stated that, ten or twelve years ago, when acting as resident house-surgeon in the Lying-in Hospital, he was called by a midwife to see a patient who had suddenly fainted and died immediately after the expulsion of the infant. The uterus, as felt through the abdominal parietes, appeared firm and contracted. The labour had been natural, without any hemorrhage or any other complication. An autopsy was not obtained; but the anterior history of the patient showed the probability of the existence of diseased heart. A short time afterwards a patient, attended by one of the pupils of the hospital, rose up and stood for the first time about a week after delivery. She immediately fainted and expired. There had been nothing particular in the history of the labour or convalescence. Drs. Denman, Clarke, Blundell, Meigs, &c., had recorded notices of cases of this kind of sudden death during labour, or after it, without convulsions or hemorrhage. Dr. S. had always taught that the existence of heart or chest disease formed a kind of complication, which was not only extremely anxious in itself, but that generally incapacitated the patient from bearing with impunity, for any great length of time, the struggles and efforts of a prolonged second stage. He considered such a complication an indication for earlier instrumental assistance than would be deemed necessary under other circumstances.—*Monthly Journ.*, May 1849.

CHOLERA.

57. Cholera is the topic of deepest interest at the present time. This pestilence is now prevailing over the larger portion of our country, causing in some places an almost incredible mortality, and nearly everywhere creating terror and alarm. To the medical profession, the public look for the measures best calculated to arrest the progress of the pestilence, and for the remedies adapted to lessen its fatality; and it behooves them to devote, with untiring zeal, their best energies to fulfil these expectations. With the desire to assist in this labour, we have collected and present, in the following articles, all the late investigations and discoveries which have been made, relative to the pathology, treatment, &c. &c., of the scourge which is now afflicting us.

---

58. *Pathological Appearances in Cholera.*—The alterations observed by M. Virchow, in the intestinal canal, consist in an uniform invasion of the entire mucous membrane, without any special affection of the glandular apparatus. It is true that the solitary glands are sometimes diseased as well as those of Peyer, but these lesions are far from constant. The changes in the mucous membrane itself are very like those of diphtheritis, commencing in intense hyperæmia, with extravasation of blood, and the exudation of a whitish membrane. At this period the microscope exhibits an amorphous granular matter, interposed between the fibres of the mucous membrane, which becomes partially sphacelated. These changes are mostly seen at the lower end of the small intestine. It should be remarked that these diphtheritic appearances were not constant.

The intestinal secretions sometimes contained albumen, at others only saline ingredients. The mesenteries were almost constantly infiltrated with a peculiar whitish granular matter.

The author also frequently met with engorgement of the spleen, but this was chiefly among boatmen, many of whom had been the subjects of intermittents.

The stomach was not remarkable for any constant morbid appearance, it was generally distended and intensely injected. An epithelial exfoliation was always seen in the duodenum, and its villi were often infiltrated with fatty matter. The gall-bladder always contained an abundance of bile. The liver was pale and exsanguine. The calices of the kidney exhibited capillary injections, with increased epithelial secretions. The bladder was always empty, and closely contracted. The lungs collapsed on opening the thorax; their inferior lobe was often engorged. In several cases the author found interlobular emphysema. The pleura was sometimes covered with patches of false membrane. The heart was pale, and rigidly contracted on the left side, but the right cavities were always gorged with dark, coagulated blood, mixed with fibrinous concretions, in which were globules resembling pus. The veins were generally gorged with black blood, while the arterial system was empty. The heart was always healthy.

Such were the appearances in the algide period of cholera. In cases which died during the typhoid period, signs of inflammation with exudation were observed in various organs. It was at the commencement of this stage that the diphtheritic patches were commonly noticed, both in the intestines and in the vagina, especially when the patient had been seized during menstruation. The lungs sometimes exhibited apoplectic extravasations. In the kidney, there were often seen the appearances indicative of acute albuminous nephritis.—*Gazette Méd.*, Jan. 20th.

---

59. *Hypertrophy of Peyer's Glands in Cholera.*—The numerous microscopic investigations which have lately been made in Paris, tend to establish that hypertrophy of the intestinal follicles, coinciding with a protrusion of Peyer's glands, and more or less vascularity, are pretty constantly found in persons who have died of cholera. Large ecchymoses have also been discovered in all the parenchymatous organs, not only on their surface, but situated within their substance. These ecchymoses have been found so extensive, and of so dark a colour, that they looked very much like gangrenous patches.—*Lancet*, May 1849.

60. *On the Pathological Condition of the Blood in Cholera.*—This is the title of an extremely interesting and valuable paper, by A. B. GARROD, M. D., contained in the *London Journal of Medicine*, for May last. The author divides the subject into two parts. The first contains an account of the results which were obtained during the former epidemic of cholera in Europe; the second treats of the analyses recently performed.

With regard to the first part, it will be sufficient to state the conclusions to be drawn from the researches formerly made, and which Dr. GARROD states to be as follows:—

1. That in cholera, the physical characters of the blood are altered, and that its tendency is to become thicker, tar-like, and less coagulable.

2. That the proportion of water is much diminished.

3. That the specific gravity of the serum is very high, which is due to the increase of the solid portion of the serum, and especially of the albumen; and that this fluid also tends to become less alkaline in its reaction.

4. That with regard to the salts of the serum, some doubt exists as to their excessive diminution.

5. That urea sometimes exists in cholera blood.

The second part details the analyses made upon eight specimens of cholera blood, with an account of the cases from which the specimens were obtained. A table is given also showing the composition of healthy blood, the more readily to compare the results.

Without entering into details, we shall give the results which Dr. Garrod has arrived at from his analyses, and show how far they accord with the results formerly obtained.

Physical Condition of Cholera Blood.—As far as this point is concerned, Dr. G. observes, all recent observations agree with those formerly made, and indicate that, from the commencement of the disease, this fluid becomes more tenacious, of a darker colour, with less disposition to coagulate, and that its specific gravity is very greatly increased. It will be found, by reference to the tables giving the results of Becquerel and Rodier's examination of the blood of men and women, that the maximum specific gravity in the male is 1062, in the female 1060. Now, in our cholera cases, we have found the specific gravity in adult males to be, in round numbers, 1076 and 1081, and in females 1068, 1074, and 1076; also, in children under ten years of age, in whom the blood probably has a specific gravity not exceeding 1045, we have found it as high as 1076 in one case, and in the second it was doubtless even higher (for it contained more solid matter), although the small quantity of the blood did not allow it to be accurately determined. We have thus proved that, in cholera, this property of the blood is greatly altered.

Water and Solids.—Of course, the watery portions of the blood experience a diminution, nearly corresponding to the increase of the specific gravity of the fluid, and the solids a corresponding increase. In the table above referred to, the maximum amount of solids in males was 240, and in females 227 parts in the 1000 of blood; in children it is very much less. In our cholera cases we have found that the numbers representing the total solids were 251, 260, 271, 271, 275, 282, 284.

Blood Globules.—These we have also found to be increased in quantity, in the case in which we have been enabled to separate them from the albumen; and in place of 140 parts in the 1000 (which is considered a very high healthy average), we have found them to form 166 and 171 parts.

Fibrine.—In the case (Worts), where the blood coagulated pretty firmly, 2.61 parts of fibrine were obtained in the 1000 parts of blood; in Dr. Parkes' case, 0.88; but I remarked that the fibrine in Worts' case, although exceeding in quantity the normal average (2.20), was yet much less consistent than natural in character. After death, the blood of this man did not coagulate at all, and I think it is probable that in cholera this element of the blood undergoes changes of quality, rather than of quantity, and that, as long as it can be ascertained correctly, analyses do not indicate any marked deficiency; after a time, however, it can no longer be collected.

Serum.—As to the specific gravity of this portion of the blood, our observa tions were only two in number, and these were obtained from the blood of the same patient, at different times; both of them tend to confirm the results previously found; namely, that this fluid becomes much heavier, from the large increase in the amount of its solid constituents; healthy serum being of specific gravity 1028, we found it in cholera to be 1039 and 1041.

Albumen.—This constituent of the serum was only estimated in two cases, and in these amounted to about 125 parts in the 1000 parts of serum, and to 103 parts in the 1000 of blood; so we see that it is increased in both fluids. This we might naturally expect, when we take into consideration the character of the stools in this disease; for in them we find that, compared with some of the other ingredients of this fluid, the albumen is thrown out in very small proportions; and although the ratio between the serum and clot is diminished, yet the decrease in the water more than counterbalances the loss which the albumen sustains.

Salts of the Blood and Serum.—On this point our results have far from accorded with those obtained by Dr. O'Shaughnessy, and upon which so much stress has been frequently laid; we will therefore dwell a short time to consider the facts which have been elicited. Becquerel and Rodier found that the maximum amount of soluble salts in the 1000 parts of blood was, in the male 7.4, the minimum 4.3, the mean 5.6 parts; in the female, maximum 7.0, minimum 6.0, and mean 6.8 parts. We have found in our cholera cases, that, where the soluble salts were separately estimated, they were represented by the numbers 10.7, 7.54, 7.5, 6.15, 6.02, and 5.72 parts in the 1000 parts of blood; every number exceeding the mean, and many the maximums obtained by Becquerel and Rodier from the healthy blood both of males and females. The analyses were performed in the same way. Again, with regard to serum in health, in Lecanu's standard we find 8.1 parts in 1000; in a specimen of healthy serum (analyzed by myself for the purpose of comparison), 9.34 parts, and in Becquerel and Rodier's table, when estimated in 1000 parts of serum, from about 6 to 8 parts. In the serum of cholera, we observe 8.12 and 7.43 parts; in neither case less than the mean of numerous analyses of healthy serum; and it should be borne in mind that, when the specific gravity of the fluid is high, from the increase of the albumen, as happens in cholera, the estimation of the salts in the 1000 parts of *serum* or *blood* is scarcely correct (for we should rather find the ratio existing between the *water* and soluble salts): if this is done, then, from our experiments, the amount of salts, instead of being *decreased*, as supposed by Dr. O'Shaughnessy, will be found always *increased*. It is curious to remark the composition of the blood in Cases I. and II.; the subjects were children under ten years of age, in whom the disease proved rapidly fatal. In both specimens of blood, the soluble salts were very greatly increased; in that from the younger child, they were nearly twice the amount found in health. I should have been almost inclined to doubt the accuracy of these analyses, as they were made on very small quantities of blood, but on looking into my note book, every step appears to have been correctly performed: and, to confirm their accuracy, the third analyses made on the top portion of the blood (much more fluid being used in the operation), showed a still greater increase of these salts, due to the presence of a larger quantity of serum in a given weight of blood. It would have been extremely interesting to have known the composition of the stools passed by these children, to have seen whether or not the ratio between the water and soluble salts was increased. In Dr. Parkes' paper on INTESTINAL DISCHARGES IN CHOLERA (*London Journal of Medicine*, No. II.), it will be observed, that the stools passed by children, 10 and 11 years of age, contained in the 1000 parts a smaller amount of the salts than those discharged by adults; and it is possible that there may exist some difference in the mode of action of the poison in children and adults: a difference in the symptoms certainly does exist.

It has been noticed, in the cases now referred to, as well as in those spoken of in Part I., that the blood often became neutral, in some cases even acid. Dr. O'Shaughnessy considered this as depending on the blood losing its carbonate of soda, to the presence of which its normal alkaline reaction was referred. At the present time, however, the existence of this salt, even in healthy blood, is denied by many; and certainly many of the properties of the serum, formerly ascribed to it, depend on the tribasic phosphate of soda, which, when it contains two atoms of fixed base, possesses an alkaline reaction, and has the power of holding carbonic acid in solution. That this alkaline salt is not deficient, even when the blood shows a decided acid reaction, was clearly proved by our finding that the ash from such blood or serum exhibited alkaline properties, quite as strong as that obtained from these fluids in health.

The nature of the acid which existed in such blood was not made out; but it certainly was not volatile. Though we have found no diminution of the salts in the blood of cholera patients, yet, of necessity, the total amount in the system must be decidedly lessened, but so also is the total bulk of the blood.

Urea.—It was stated, in our first part, that urea had been detected in the blood and other fluids in cholera; but in most cases its amount was not estimated, and no relation between the quantity of this principle and the stage or intensity of the disease observed: to this point we paid some attention, and I think that the results obtained will prove interesing. In Cases II. and III. (Toothing children), no urea was found, and certainly it did not exist in the blood to any large extent. Still, from the small amount of blood examined, a quantity greater than in health might have escaped discovery; and that such was the case, we have some evidence in the increased amount of uric acid, which, when suspension of the urinary excretion takes place, is found in excess in the blood along with the urea, and can be more easily discovered, not being so liable to suffer decomposition; still the urea was not in large excess. In these cases, death took place during the stage of collapse. In Case III. it will be also observed that no urea was found, but Dr. Parkes remarks, that it may have been present in small quantities, but certainly *not in large excess.* The blood in Case VI. was not examined for this principle. In Case V. urea was sought for twice; first, when the patient was in a state of partial collapse, next, in the blood obtained from the large vessels after death; and it will be seen, that in the collapse stage (not intense) 1000 parts of blood contained 0.38 part of urea; after death (partial reaction having taken place), as much as 0.92 part was found in the same quantity of blood. In Case VI., where the blood was taken after death, the patient having had partial reaction, and then becoming semi-comatose, 0.65 part of urea was obtained from the 1000 parts of blood; and, lastly, in Case VII., where reaction had been restored, and the patient was suffering considerably from head symptoms and fever, the 1000 parts of the serum of the blood taken during life, yielded 1.14 parts of urea. So we find that the urea gradually increases in amount, from the cold stage to that of febrile reaction. The explanation of this phenomenon is, I think, exceedingly simple; for I should imagine that, in intense and sudden collapse, not only is the function of the urinary excreting organ diminished or suppressed, but also the vital metamorphoses, and therefore the formation of urea, are likewise nearly suspended. This would account for the small amount usually found in the collapse, and probably the quantity varies inversely with the intensity of this state; but when partial reaction ensues, and the vital changes take place with greater activity, should the function of the kidneys not be at the same time restored, urea must accumulate in the blood, and the amount must depend on the degree of the reaction (febrile or not), and the extent of suppression of the urinary secretion. This view is certainly supported by the results which have been as yet obtained, not only recently by ourselves, but also in the former epidemic by Dr. O'Shaughnessy and others.

Conclusions.—In comparing the recent analyses with those given in the first part of the paper, it will be seen that, as far as concerns the physical properties of the blood, the diminished amount of water, and the consequent increase of the solid portion, also the high specific gravity of the serum, and its tendency to become less alkaline, our own conclusions perfectly agree with those previously made; and therefore, that conclusions 1, 2, and 3, before given, are thus far confirmed. With regard to (4) and (5), concerning the salts and urea, our conclusions must be—

4. That in cholera, the saline constituents of the blood are not only not decreased in amount, but sometimes exist even in increased proportion, and that

the diminution of its alkaline reaction is not due to the loss of salts, but to the impeded excretion of organic acids, which are constantly being formed in the system.

5. That urea usually exists in increased quantities in cholera blood, but that the amount differs considerably in the different stages of the disease; being but small in quantity in the intense stage of collapse, increasing during reaction, and in excess when consecutive febrile symptoms occur.

---

61. *Analyses of the Blood in Cholera.*—Dr. William Robertson read before the Medico-Chirurgical Society of Edinburgh (April 4) an account of his observations on the blood drawn from patients labouring under cholera. He grouped the cases under four heads, described the appearance and general properties of the blood in each, and exhibited the general chemical results obtained from thirty analyses, conducted according to Andral and Gavarret's process. Five of the analyses were made by Dr. Douglas Maclagan, one by Dr. Christison, and the rest by Dr. Robertson.

Average Constitution of 1000 *parts of Cholera Blood.*

	Fibrine.	Org. Serous Solids.	Inor. Do.	Globules.	Total Solids.	Water.	Sp. gr. of Serum.	Sp. gr. of Blood.
Early stage,	2.7	82.2	7.8	103.4	196.1	803.9	1030.0	1053.7
Early collapse,	3.2	94.0	7.0	130.8	235.0	765.0	1033.7	1059.5
Collapse,	3.2	101.2	6.9	130.0	241.3	758.7	1036.6	1066.4
Reaction stage,	3.5	76.6	6.6	126.7	213.4	786.6	1030.6	1057.9

Distinct indications of the presence of urea had been obtained both by Dr. D. Maclagan and by Dr. Robertson, upon testing blood taken from the heart and veins after death, and on one occasion Dr. Maclagan had obtained similar indications, upon examining blood drawn from the arm during the early stage of the disease. *Urea* seemed most abundant in the blood of patients who died during the stage of reaction; 1000 grains of blood yielding in one case 1.6, in another .73 of nitrate of urea. The chief conclusion which these analyses, coupled with certain phenomena of the disease, suggested, were, 1st—That anæmia, or an impoverished condition of the blood, acted as a predisposing cause of cholera. 2dly. That, although during cholera the relative proportion of the blood constituents was rapidly and singularly altered, there was yet no evidence that the primary operation of the morbific poison was exerted upon the circulating fluid,—the chemical changes recorded were only the *effects* of the morbid process. 3dly. That the changes which the blood underwent up to the period of reaction, consisted in a concentration of the serum from loss of water, and a loss of salts almost proportionate to the amount of water abstracted. 4thly. That the *proportion* of salts was lower during reaction or convalescence than during the progress of the disease. For every 1000 parts of water, there existed during the *early stage* 9.7, during early collapse 9.2, during collapse 9.1, and during *reaction* only 8.4 parts of mineral constituents of the serum. That, consequently, the phenomena of the stage of collapse could not be due to the loss of salts, and that the saline treatment did not rest upon a good theoretical foundation. 5thly. That the changes observed during reaction were probably due, in part, to absorption of fluid into the circulation, and consequent dilution of the blood. This absorption sufficiently accounted for the small per centage of inorganic serous solids during reaction, and might assist in explaining the marked diminution of the organic serous solids. 6thly. That during reaction the fibrine was often proportionately increased, and that there was reason to believe that blood corpuscles were at the same time rapidly formed. 7thly. That the albumen which was withdrawn from the circulation, was metamorphosed, converted into tissues, excreted by the bowels, and in most cases likewise excreted by the kidneys. In nearly eighty per cent. of the urines examined during convalescence, albumen was detected; its absence might accordingly be regarded as exceptional. 8thly. That the formation and retention of urea in the blood were always to be dreaded during reaction, and hence that the use of diuretic remedies, and especially of such as were believed to possess the property of expelling urea from the system, was clearly indicated. Tabular statements of the analyses were exhibited.

Dr. Christison inquired whether an experiment which he had made during the former epidemic, and which proved that the dark blood of cholera was yet quite susceptible of arterialization, had been confirmed on this visit of the disease. He had found that the blood, when defibrinated by agitation in a phial with pieces of zinc, rapidly assumed the arterial hue when subsequently agitated with atmospheric air or with oxygen gas. Dr. Douglas Maclagan and Dr. William Robertson had both recently confirmed the accuracy of Dr. Christison's observations.—*Monthly Journal*, May 1849.

62. *On the Liquids ejected in Cholera.* By M. Mialhe.—M. Andral established, in a paper read to the Academy of Sciences in 1847, that, "The white fluid which fills the intestines of cholera patients is not actually a part of the blood, as has often been maintained, for neither albumen nor fibrine can be found in it; but that it is formed by mucus, secreted suddenly and in large quantities, and by that very fact greatly altered in quality." By analyses made during the present epidemic, I find that the ejected fluid contains neither fibrine nor albumen, but yields, by certain chemical re-agents, a plentiful precipitate, which precipitate is *albuminose.* This latter substance is, as I have lately shown, the final product of the digestion of albuminous articles of food; just as glucose is the final product of the digestion of amylaceous matters. Albuminose has characters in common with albumen: both are soluble in water and insoluble in alcohol, both give a precipitate by the addition of salts of lead, mercury, and silver; by chlorine and tannin. But albuminose, when isolated, does *not* coagulate by heat, nor acids, nor even by nitric acid. These two latter properties will at once distinguish albuminose from albumen. Now the cholera dejections coagulate neither by heat nor nitric acid, which fact points to the absence of albumen: they give an abundant precipitate on the addition of alcohol, the salts of lead; mercury and silver, of chlorine, tannin, &c.; which precipitate is albuminose. The next question is, how this albuminose comes to be secreted by the economy? Albuminose is not formed at once; it can only take its origin in the albuminoid portions of the blood, and in the living tissues. The albuminous and fibrinous parts of the blood undergo, by the effects of cholera, a transformation analogous to that which would result from the digestion of these same principles in the stomach under the influence of pepsine. Muscles are liable to the same metamorphosis, and are thus exposed to a sort of interstitial absorption. The albuminose, thus formed, instead of ministering to the nutrition of the patient, as is the case in prolonged low diet, is, on the contrary, immediately driven from the system, both by the gastro-intestinal mucous membrane and the skin, to which latter it gives a very characteristic abnormal viscosity. The first albuminose secreted is furnished by the whole mass of the blood, and the muscles undergo their molecular transformation only secondarily! This muscular absorption explains very satisfactorily the rapid phenomena of prostration and loss of flesh so remarkable in cholera patients. But if the albuminose arising from the blood found no difficulty in passing from the torrent of the circulation into the digestive cavities, it is far different with the albuminose which is derived from muscular interstitial absorption, for this second variety must, before oozing upon the surface of mucous membranes, pass through the capillary system, in order to enter the circulation. Hence, we shall have an arrest of circulation, and consequent upon it, cyanosis, algidity, and asphyxia, at the moment of the interstitial absorption, giving rise to considerable tumidity, (eight or ten times the original volume,) which the fibrin undergoes in order to dissolve and-be metamorphosed into albuminose. Such are the material causes which, according to my views, produce the hitherto unexplained phenomena of this dreadful disease. Thus it appears that the dejections of cholera contain an enormous proportion of albuminose, and this albuminose can only be derived from the organic elements of the system. In searching for the cause of this extraordinary perturbation, one would be led to

admit a fermentiferous principle, which gives rise to phenomena entirely analogous to those of the digestion of albuminoid articles of food in the stomach. When the economy appropriates to itself the albuminous principles ingested into the body, it must subject them to a constitutive molecular decomposition, which effaces from them all traces of organization. The system then assimilates them, and gives them a new organization, which is the origin of albumen, fibrine, and cruor. Now it must be noticed, on the other hand, that these principles, thus newly formed, cannot leave the economy without having been completely disorganized. This is exactly what takes place in cholera; a disease in which the presence of albuminose in the secretion is an evident proof of a disorganizing transformation. For, were it otherwise, we should see, not albuminose, but albumen, fibrine, and cruor escaping from the vessels, as by a kind of expression, through the intestinal mucous membrane, as most authors have hitherto believed. Starting from this hypothesis, it looks as if we could arrest or suspend the abnormal phenomena of cholera in the same way as certain fermentations are stopped. But all the substances calculated to produce this effect are unfortunately too active or poisonous; as the salts of lead, copper, mercury, and silver, mineral acids, &c. They would, in fact, be more dangerous than the disease itself. Tannin (and all the medicines which act in virtue of this substance) would seem rather desirable, owing to its faint action on the mucous membrane; but in spite of the favourable results obtained by Dr. Graff, of Berlin, it should not be forgotten that tannin, at the same time that it acts upon the fermentiferous substances, acts also on the albuminoid principles, and that its coagulating powers must, in large doses, be rather dangerous. It seems extremely probable, that the different prophylactic means which have been extolled in cholera, some being violent excitants, as mustard, pepper, cajeput oil, naphtha, creasote, the sesquichloride of carbon, solutions of potassa, soda, ammonia, and their various salts; others, sedative or anæsthetic agents, as opium and its preparations, Indian hemp, ether, and chloroform, act by producing in the economy, the first, a powerful reaction; the others, a stupefaction, which does not allow of the morbid disorganization. I regret, after having investigated the nature and the causes of the choleric affection, to have no especial method of cure to bring forward. I may, perhaps, conclude by stating that every one of the above-mentioned means may become all-powerful in the hands of an enlightened practitioner.—*L' Union Médicale.*

63. *Pathology and Therapeutics of Cholera.*—"There are certain points," says Dr. Garrod, in his interesting paper on the Pathological Condition of the Blood in Cholera, "with regard to the pathology and therapeutics of the disease, which the consideration of the results of the chemical examination of the blood and other fluids naturally suggests to the mind. In the first place, it would appear that the cholera poison, when introduced into the blood in sufficient quantities, causes an intense exosmotic action of the mucous membrane of the alimentary canal, at the same time destroying its endosmotic power. The blood, therefore, being deprived of a certain amount of water and salts, by the intestinal evacuations, and, not possessing the power of regaining these by absorption from the stomach, becomes altered in the manner we have seen, and ill suited for circulation in the extreme vessels; thereby giving rise to suppression of the various excreting functions, by which in turn it is rendered impure. But a question now arises: Is this condition of blood essential, and cannot the stage of collapse be induced by the direct influence of the poison? There are certain cases known by the name of 'Cholera Sicca,' which would seem to favour this latter view; but from what I can ascertain, no analyses of blood have been made in such, and as far as my own experience goes, the amount of intestinal evacuations in any case is by no means an indication of the extent to which the blood has become altered. This is also well shown by the condition of the blood in severe bilious diarrhœa, in which its specific gravity appears to remain unaltered, the endosmotic or absorbing power probably remaining entire. Supposing this latter property entirely suspended, it would require but little amount of intestinal evacuation to cause this condition of blood; the loss of water by the skin and lungs would alone soon produce it; and that this

power is sometimes lost, will be seen in examining Case V. (Worts), in which, although many gallons of water were taken into the stomach, the blood still continued to increase in specific gravity.

"Assuming that such a condition of intestinal mucous membrane exists in cholera, it gives us but little hopes of effecting much by remedies administered by the mouth, during the collapse: and experience has shown us, that very little confidence can be placed in them. The saline drinks, recommended by Dr. Stevens, must here fail, as even water is unable to be absorbed. This led to the method of injection of saline fluids into the veins; and certainly it appears that, even in the most intense stage of collapse, patients may, for a time, be restored by their employment. Unfortunately, however, the improvement has, in most cases, proved but temporary; but still enough has been seen to cause many to think that their use is strongly called for. Should they be ever again employed, I think that more attention should be paid both to the nature and quantity of the salts contained in the fluid than has hitherto been done; and a solution should be employed whose composition resembles, as much as possible, the portion of the blood which has been lost. One would be apt to think that the blood could not bear with impunity a considerable quantity of carbonate of soda in place of the phosphate; yet such a substitution, I believe, has generally been made. May not the use of improper fluids have been in part the cause of the truth of the remark quoted by Dr. Watson, in his *Lectures on the Practice of Medicine*, that, 'However it might be with pigs and herrings, *salting* a patient in cholera was not always the same thing as *curing* him.'

"Might not some agent be injected, which would tend to prevent the exosmotic action of the intestines? Certain bodies, possessing such a power on membranes, have been found. When reaction takes place, and the watery portion of the blood becomes restored, it would then seem rational to employ drinks containing small quantities of the salts; for it does not seem improbable that the saline deficiency, which must then occur, unless supplied, may tend to prevent the due action of the kidneys and other excreting organs. At this time, also, other remedies, as calomel, etc., should be given, with the intention of restoring the excretions."—*London Journ. Med.*, May 1849.

---

64. *Cholera—Absence of the Precursory Diarrhœa—Treatment of the Disease.*—At a meeting of the Royal Medical and Chirurgical Society, (Feb. 27,) Mr. Streeter said that he "should like to direct attention to the fact of the very large number of cases of cholera which occur without premonitory diarrhœa, and to the greater danger attending those cases; for I do not think that sufficient attention has been paid to those cases in which collapse has been ushered in without previous symptoms, and to those in which there is scarcely any vomiting and purging, and which, I believe, are universally fatal. There are a large number of cases in which the disease is ushered in without previous purging and vomiting. With reference to treatment, I think a distinction should be made between cases of collapse originating directly from the poison, and those in which premonitory diarrhœa has existed for several days, as in those cases the collapse is due partly to the poison, and partly to the exhaustion from serous evacuations. After the most careful observation, I have come to the belief that there can be no recovery except where nature or art sets up the action of vomiting; and, as to remedies, any attempt to check that process checks the mode which nature adopts to overcome the disease. We are constantly told, in reference to the progress of a patient, that all is well 'except the vomiting;' but I believe that the only successful way to produce reaction is to encourage the vomiting, and sustain it at intervals, regulated by the powers of the patient. With respect to the agent for the production of this, it seems to me to matter little; mustard and salt have been favourite remedies, and certainly the latter, from its known harmlessness, is worthy of adoption; cold water, also, will in many instances succeed; but there have been cases in which it will not keep it up, and then powerful stimuli must be employed."

Dr. Baly remarked that the subject of the relation of the precursory diarrhœa to cholera is important. The question is, whether the diarrhœa is a part of the disease, and if so, whether we can cut it short. "As far as I have observed at Millbank Prison, the diarrhœa is of three classes: in the one, there are one or two evacuations before collapse; in the second, there is serious diarrhœa, rice water evacuations, and occasional vomiting. In both these cases, I think the diarrhœa is a part of the disease; but it seems to me impossible to stop it by the ordinary remedies. Then there is the third kind, in which at first the evacuations have not the character of rice water, and there is no vomiting or cramp. This goes on for several days, and in the early stage may be checked. The choleraic diarrhœa subsequently ensues. It appears to me that the early diarrhœa in such cases, of which I have seen several, is not a part of the disease, but predisposes to it; but this class is not very frequent; in the more frequent cases, the ordinary remedies fail in cure. As to treatment of the cholera itself, I have not met with any greater success than others, and I believe that no one will succeed till a specific be found for it. We are at greater disadvantage in cholera than in typhus fever, because the effects of the typhus poison are more under our control than those of the cholera poison. Strong stimulants, I think, are of little avail, and, generally, the less we do the better. Warmth is beneficial, but not a great degree of heat; a very moderate degree of heat is certainly good. I should also recommend the administration of cold water, not for the purpose of producing vomiting, but to dilute the blood. I have found benefit from the use of chloroform, which acts as a palliative, by relieving pain, the cramps, and vomiting."

Dr. Baly said, that he had used the injection of saline fluids into the veins in six cases, and the result was uniformly death. "In the first case, the effect of it was very encouraging; the patient previously appeared to me as if in his last gasp; in a quarter of an hour, he breathed gently, seemed in a quiet sleep, and the colour in the cheek was natural. In no other case was the effect so marked: while in all there was a return to collapse. In two cases I employed large doses of calomel; one man had five 10-grain doses and five scruple doses, and after death it was all found in his stomach, with the exception of a small portion in the duodenum."

Mr. Streeter believes that the experience in Great Britain in the former epidemic has settled the point, that the treatment by injections of salines into the veins should be abandoned. "I at one time hoped much from stimulating the skin by mustard cataplasms on the arms and over the abdomen; they reddened the skin, but produced no reaction, and this was tried in several cases. I found that, unless vomiting was produced, reaction did not occur; and this from an experience that extended over some hundreds of cases. It is, I think, important that we should treat cases of diarrhœa as if they would turn to cholera, and my prescription generally was: 1 gr. opium, 1 gr. acetate of lead, 1 gr. capsicum, 1 gr. calomel. With respect to large doses of calomel, I found no benefit arising from them. (I gave half a drachm in one instance.) I also saw phosphorus administered in two cases, and in one case a pill was found, as taken, in the stomach, and, in the other, in the appendix vermiformis."

Mr. Busk, surgeon of the Dreadnought, stated that "out of forty cases that have come under my notice, about half have terminated fatally; so that, while the cases have not been numerous, they have been very fatal, and have been generally confined to young men of muscular strength, and who had been in a condition to obtain sufficient wholesome food; the majority of them have been from colliers. In these cases, I have observed a considerable difference in the type of the disease between that now prevailing and in the previous epidemic. I refer to the greater proportional number who have not died in a state of collapse at the present time; they have generally died in a state of oppression and coma, and almost invariably with suppression of the urinary secretion. Also, in the symptoms of the disease in the state of collapse there is considerable difference; the cramps are not so severe, the coldness not so intense, and the facility with which heat is restored is much greater now than formerly. In many cases the temperature in the axilla was 96, and that under the tongue 78, showing that the blood in the lungs was cool and probably stagnating. Another difference is, the absence of perspiration, while, in 1832, the perspiration was enormous. The duration of the disease, also, was very much longer, from their not dying in a state of collapse. On the treatment, I can add nothing to the observations of Dr. Baly and others; my opinion is, that we have no treatment, heroic or otherwise, suited to control the disease: the only thing I am certain of is, that chloroform relieves the cramps, and thus has a beneficial influence in the way of relief; but it has no other control over the disease. The chief force of the disease, at the present time, seems to fall on the kidneys; no means have had the effect of inducing secretion of the urine; turpentine epithems and frictions have alike been unsuccessful. Another point is that, after the urine has been suppressed, and when it is again passed, the first is invariably albuminous; the tubuli are usually found crammed with epithelium, and the functions of the gland are thus obstructed. The great thing here is, to excite the action of the kidneys. With regard to the pathology of the disease, I have nothing particular to offer. There is an affection, however, of the large intestine which I do not remember to have seen described. It usually occurs in the transverse arch of the colon, and consists at first of congestion of a patch of the mucous membrane, which, if the case is prolonged, seems to be followed by circumscribed gangrene. In these cases, especially, it would appear that bloody motions are passed; but motions of this character are not limited to them. Blood, in any quantity, in the motions, has almost invariably been a fatal sign. (The speaker here exhibited two specimens, consisting of the transverse arch of the colon, showing the simple ecchymosis and gangrene of the mucous membrane.) No doubt it must be very violent action which produces this extreme disorganization; the disease appears to depend upon the introduction of a morbid poison, which nature making an effort to eliminate, the attempt destroys the membrane.—*Med. Times*, March 10, 1849.

65. *Effect of Remedies in Cholera.*—In a conversation at the Medico-Chirurgical Society regarding the effects of remedies during the recent epidemic of cholera at Edinburgh, it was stated that the saline injection of the veins had been practiced in the cholera hospital in twenty-five or twenty-six cases, and that, although remarkable temporary benefit seemed sometimes to result, no patient had survived the operation more than eight days. In 1832, about 1-6th of those whose veins were injected recovered; profound collapse was, however, not always waited for, before recourse was had to the operation. The *diuretics* used on the present occasion were bitart.-potass, nitre, digitalis, colchicum, and tinct. lyttæ. Blood-letting, practiced early, was the remedy which Dr. Robertson had found most efficacious in averting the most formidable symptoms of the disease. —*Monthly Journal*, May 1849.

66. *Treatment of Asiatic Cholera by Internal and External Means.*—M. Blatin stated to the French Academy of Medicine, Jan. 23d, at great length, the principal treatment which he was in the habit of adopting in the district where he practiced. He said that, out of 225 severe cases of cholera, he had only had 44 deaths, although, out of 461 patients, equally affected with the disease, the mortality rose to 196. The internal treatment which he recommends, in the majority of cases, consists, almost exclusively, of the administration of cold water in large doses. We know the extreme thirst which torments cholera patients; and we know the ardour with which they beg for cooling drinks. The observation of this fact induced M. Blatin, after some trials, not only to satisfy the desire of the patients, but to induce them to take quantities of liquid, which would appear enormous, were we to lose sight of the vomiting and purging. Some of his patients drunk between five and six pailfuls of cold water in the day. This remedy favoured the return of heat in a very manifest manner, and assisted in modifying the secretions, with regard to their sero-albuminous character, to such an extent that, at the commencement of the treatment, the patients drank with extreme avidity. With reference to bleeding, M. Blatin thus expressed himself:—"At the commencement of the disease, moderate bleeding does not appear to me to be injurious; it has appeared to me to promote an improved state of the blood. During reaction, I have rarely ever found it necessary; this is probably due to my having watched carefully the approach and progress of that state, and not having hastened it by a stimulating plan of treatment. Leeches, which I have frequently applied to the epigastrium, have sucked but little, and have sometimes died on the place; and there has been no hemorrhage after their removal. During the algide period, I have found it

useless to attempt bleeding from the arm, or by cupping-glasses. I have opened the temporal artery at least ten times, and usually, after from 100 to 150 grammes (from 3½ to 5 oz. of English avoirdupois weight) of slightly red blood, the bleeding has ceased spontaneously. In three cases I observed some bubbles of gas escape with the first drops of liquid, from the opening which I made in the arm. The result in each of these cases was fatal. Is there a decomposition of fluid in cholera patients? I am inclined to think that there is."—*Lond. Journ. Med.*, March 1849.

---

67. *Treatment of Cholera in six of the Parisian Hospitals.*—The *Gazette Médicale de Paris*, of May 12th and 19th, contains the following account of the practice adopted by the medical officers of six of the Parisian hospitals, in the treatment of cholera:

I. Hôtel-Dieu. The patients who enter this institution are of all ages and of both sexes, and mostly destitute. The hospital is generally supposed to be one of the most unhealthy, being situated on the Seine, badly ventilated, and over-crowded. The medical practice is based on anatomy and physiology, as may be easily imagined when we remember that Chomel, Louis, and Rostan teach and practice there. Their treatment is hence to a great extent uniform, and is of the following character:

For diarrhœa, most employ opium and its preparations, and astringents; and all reject emeto-cathartic remedies. To allay vomiting, they give ice, iced Seltzer water, and the anti-emetic potion of Riverius. Depression is treated by various internal and external stimulants; pain, by calmatives, and in certain cases by revulsives; the loss of warmth, by various calefacient remedies, one using the vapour bath, another the hot air bath, another the water bath, at a temperature of 40° to 42° cent. (104° to 107° Fahr.). Excessive heat, and the appearance of internal congestion, treated by local depletion, cold water, and even by ice. With the exception of that of two of the medical officers, one of whom trusts to saline treatment, and another to emetics, the treatment adopted in the Hôtel-Dieu is of the above character, being neither specific, nor remarkably violent, nor purely empiric, but a system of physiological rationalism.

M. Chomel admits the existence of several forms of cholera, each requiring its appropriate treatment. These are—the *nervous* form, characterized by the predominance of pain, cramps, and disturbance of the intestines; the *algide* form, by diminution of heat, and disturbance of circulation and respiration; the *gastro-intestinal* form, by the abundance of the evacuations; and the *inflammatory* form, bearing some resemblance to acute gastritis and dysentery. In the nervous form, M. Chomel administers opium by the mouth or in injections, or both ways at once, if possible; if it cannot be administered in either of these ways, he employs the endermic method. In the algide stage, M. Chomel prefers dry to moist vapour baths; the latter favouring the retention on the surface of the cold clammy sweat which opposes reaction, and with diarrhœa and vomiting, tends to produce colliquation. When the hot air bath cannot be conveniently administered, he uses bags of hot sand, which have the advantage over bottles of hot water, of being capable of being equally adapted to all parts of the surface. For similar reasons, he prefers friction with aromatic substances, benzoin, frankincense, or juniper berries. He sometimes employs friction with pounded ice, but only in cases where the algide symptoms are recent, and the patient young and of a strong constitution; in patients of weak constitution, he entirely rejects this remedy. The internal remedies which he employs are hot tea punch, alcoholic drinks, etc.: but these do not seem to him suitable when the patient complains of internal heat; in such cases, he prescribes ice, with excitants. In the inflammatory form, with heat of skin, and full, resisting pulse, he employs general or local bleeding, cataplasms to the abdomen, baths, emollient and demulcent draughts, with opium. The antiphlogistic treatment must always be regulated by the debility of the patient, and the prostration consequent on the attack. If vomiting be abundant and frequent, M. Chomel administers ice in small fragments, or pounded, in small quantities and at short intervals, so that it may be brought into contact with the stomach in a continuous manner. Seltzer water with ice, the anti-emetic draught, subnitrate of bismuth, calumba, and opium, are alternately used, to fulfil the same indication. If the vomiting obstinately resist these means, he applies a blister to the epigastric region; more rarely, and only when there are symptoms of gastric inflammation, he employs cupping or leeches. Diarrhœa is treated by moderation in the quantity of drink, opiate, or astringent injections, with alum, rhatany, monesia, etc.; and a large blister to the abdomen in obstinate cases. M. Chomel treats cramps by opium, used in frictions and internally. He pays much attention to dyspnœa; if it be accompanied with febrile reaction, he employs general bleeding; but if—which is much more frequent—there be no fever, he treats it by diffusible stimulants, as ether, and nitrate of ammonia. In cases complicated at the commencement with cerebral symptoms, opium is excluded from the treatment, and revulsives are employed, as blisters on the limbs, and laxatives, if there be no diarrhœa. When debility is the prevailing symptom, the treatment consists chiefly of tonics.

M. Louis. The treatment adopted by this physician does not differ sensibly from that of M. Chomel. Besides those remedies which may be called for by certain symptoms, his method of treatment mainly consists of calefacients, viz., the hot air bath and warm infusion of mint, to restore the heat and excite the circulation; and aromatic stimulants, with injections, containing ten or twelve drops of laudanum, several times daily, to restrain the evacuations and pains. When heat is re-established, Seltzer water is substituted for aromatic draughts.

M. Rostan prefers, at the commencement of the disease, for the purpose of restoring heat, hot water baths, at a temperature of 40 to 42 cent., followed by some hot aromatic infusion, and friction of the limbs with ammonia liniment. If these means are insufficient, a mixture, containing ether, alcohol, and laudanum, is administered. Acidity of the secretions is treated by alkaline remedies, as ammonia, or lime-water; vomiting and diarrhœa by opium, administered by mouth, and in enemata, containing each six drops of laudanum. In reaction, moderate bleeding is sometimes employed, but only when there are symptoms of internal congestion. In obstinate vomiting, a large blister is applied to the epigastric region.

M. Husson's treatment, which differs little from the preceding, consists in the use of hot air baths, dry frictions, and the following stimulant mixture: Infusion of limes or of mint, one hundred and twenty grammes; acetate of ammonia, two to four grammes; wine of Bagnols, sixty grammes; tincture of canella, four grammes. He treats diarrhœa by opiate injections; obstinate vomiting, after reaction, by ice; and administers quinine during convalescence.

M. Martin Solon. The remedies employed in the practice of M. Martin Solon are partly adapted to particular symptoms, and partly intended to act in a special manner on the system and to modify the state of the blood. The treatment of individual symptoms comprises the use of the hot air bath on the admission of the patient, if in the algide stage, and the administration of one of the following mixtures: laudanum of Sydenham, twenty-five drops; Hoffmann's liquor, fifteen drops; infusion of mint, sixty grammes; ammonia, twenty drops; syrup, thirty grammes; or a mixture of distilled mint-water, ammonia, powdered calumba, and trisnitrate of bismuth: these mixtures are alternated with punch. For diarrhœa, he employs opiate and albuminous enemata; and applies, immediately after the hot air bath has been used, sinapisms to the abdomen, chest, and vertebral column, to maintain warmth, or excite it, if the hot air bath have not been sufficient. To fulfil the second indication, he administers carbonate of ammonia, in doses of thirty centigrammes (about 4½ grains), six times a-day. In obstinate vomiting, he uses cupping over the epigastrium, or a blister, which is afterwards dressed with a centigramme (about ⅙ of a grain) of hydrochlorate of morphia. Diarrhœa is treated by injections, containing trisnitrate of bismuth; and suppression of urine by a ptisan of couch grass and nitrate of potash. During convalescence, he gives wine of Bagnols with Seltzer water.

M. Guerard distinguishes three principal stages of the disease. At the commencement, when there are diarrhœa and vomiting, without cyanosis or cramps, whether this be only cholerine, or incipient cholera, he uses narcotics, astringent injections, and rice-water; and, if the prodromata continue in spite of these, opiate electuary and vinous drinks. When cholera has obviously declared itself, he prescribes the hot air bath every quarter of an hour; aromatic drinks; ice and Seltzer water for vomiting; lemonade, with wine, if it can be borne, to be continued also after the vomiting has ceased. To relieve the cramps, and other neuralgic symptoms, he gives ether and chloroform: the latter remedy has appeared to him well calculated to fulfil this indication. When moderate reaction has set in, he confines himself to the expectant treatment; if it be excessive, with symptoms of internal congestion, he employs local and general bleedings, and sinapisms. If diarrhœa persist after reaction, he treats it by nitrate of silver, in mixtures, or in injections, containing about two and a half grains.

M. HONORE employed vapour baths; hot aromatic draughts, with syrup and ether; Seltzer water; dry frictions; enemata of rhatany and laudanum; wine of Bagnols, with laudanum, in spoonfuls; ice; bleeding, Seltzer water, and lemonade, after reaction.

M. LEGER, who has succeeded M. Honoré, adopts the saline treatment, recommended by Dr. Stevens. He gives common salt, in mixture and enemata; the daily dose of each being from fifteen to twenty-five grammes, until the vomiting has ceased. He states that the vomiting is generally increased at first, but soon diminishes, and usually ceases in about twelve hours. The effect on the alvine evacuations is still more rapid; the first injections often restoring their natural bilious character. The only additional remedy which he employs in the early stage, is hot cloths, to restore warmth.

M. TARDIEU at first employed sea-water in five cases, in one only of which it appeared to produce permanently beneficial results. The restoration of the bilious character of the evacuations was the most obvious effect of this treatment. He now gives stimulants, preceded by an ipecacuanha emetic, hot air baths, aromatic infusions, Seltzer water, etc. He only uses opium where the cramps and other nervous symptoms are very intense, and is very guarded in its use, from the dread of cerebral complications.

HÔPITAL DE LA CHARITE. The situation and internal arrangements of this hospital are more healthy than those of the Hôtel Dieu, and its inmates are mostly from a better class of the community. The medical treatment also presents more diversity.

M. FOUQUIER, and M. OULMONT. M. Oulmont was the first to introduce the saline treatment into the Parisian hospitals; and he employs this method in all cases of cholera, admitting, as an aid, only the external means of restoring warmth. His prescriptions uniformly are: common salt, fifteen grammes; gum-mixture, one hundred and twenty grammes, to be taken every quarter of an hour in spoonfuls; and two or three enemata during the day, containing fifteen grammes of salt with a sufficient quantity of water. This treatment has not, as M. Oulmont himself confesses, entirely answered the expectations formed regarding it. M. Fouquier does not seem to have adopted any exclusive mode of treatment, but to have generally given emetics of ipecacuanha, in doses of two grammes, with diffusible stimulants, and opiate injections.

M. RAYER abstains from all experiments, and employs the same treatment as he adopted in 1832. He considers the digestive organs as the chief seat of the disease, and prescribes, in all cases, either ten centigrammes of opium in pills, during the day; or a mixture, with from six to twelve drops of laudanum, and three or four injections, each containing twelve drops of laudanum; cupping to the epigastric or umbilical regions several days in succession, or even several times in the same day; venesection from the arm, when possible; iced Seltzer water for common drink. In several cases complicated with delirium he has opened the temporal artery, but without success.

M. CRUVEILHIER employs a very active and various treatment. Most commonly, he administers at first hot aromatic infusions with ether; then a combination of astringents and narcotics, with some such mixture as the following: peppermint water, one hundred and twenty grammes; extract of catechu, one gramme; laudanum, twenty drops. For diarrhœa, he employs enemata containing from fifteen to twenty drops of laudanum; and if there be local abdominal, or thoracic pains, he has recourse to repeated local bleedings, until the pains have ceased. A succession of sinapisms to the limbs, and friction with a stimulating liniment, complete in general his treatment of the algide stage. In some very severe cases, almost *foudroyants*, he administers every half hour a spoonful of the following mixture: laudanum, three grammes; ammonia, five grammes; ether, fifteen grammes. The treatment in the intervals consists of draughts of hot water, sweetened with gum syrup; sinapisms to surround the limbs; a large sinapism to the abdomen, and a blister to the chest or vertebral column. M. Cruveilhier has tried the *stachys*, but without any sensible result, which may be ascribed to his having combined it with opium and other remedies.

M. Bouillaud generally adopts the saline treatment, and gives daily fifteen grammes of salt in mixture, and two enemata, each containing fifteen grammes of salt. The only additional means which he uses are ice and Seltzer water, and sinapisms to restore warmth. He rarely uses the hot air bath, and only when algidity is obstinate. More rarely, M. Bouillaud uses opiate enemata, with ice and Seltzer water, sinapisms and stimulating liniments. He is entirely opposed to general or local bleeding, even in the stage of reaction.

M. Briquet. All the efforts of M. Briquet are directed to the promotion of reaction, at the same time that he employs opiates for the evacuations and pains. His treatment at first consisted of the hot air bath, infusion of mint, or punch, frictions with ammonia, and sinapisms to the limbs. He has since adopted a more active method, consisting of the alternate administration of ice and hot aromatic and stimulant drinks, and alternate frictions with pounded ice, and with alcoholic and ammoniacal liniments every half hour. The other indications are fulfilled by pills of thebaic extract, mixtures with acetate of morphia, enemata of starch and laudanum (six to twelve drops), Seltzer water, etc. In some cases he has given emetics of ipecacuanha, in doses of one or two grammes. The comparative result of his treatment is not known.

M. Pidoux has not confined himself to any one method, but has employed a varied treatment. At first he prescribed, in the algide stage, diffusible stimulants with narcotics, as tea, hot infusions of lime, or mint, with syrup of ether and of opium, a succession of sinapisms to the limbs, etc.; ice and Seltzer water, when reaction had commenced. More recently, he employed opium in large doses, in mixture and injections; but was soon led to renounce its use, from its appearing to produce severe cerebral disturbance. Saline injections have also been tried and abandoned. M. Pidoux employed electro-galvanism in some cases with the effect of relieving some of the more distressing nervous symptoms, as cramp, hiccup, vomiting, etc.; but he has not repeated this remedy. He has also tried the terchloride of carbon, but without sensible effect. At present, he is making experiments on the utility of trisnitrate of bismuth in diarrhœa.

Hôpital du Val-de-Grace. This being a military hospital, its inmates consist of men generally of good constitution, and not weakened by privations or excesses. It must be remembered, however, that the present dwellings of many of the soldiers in Paris do not present the most satisfactory conditions of aëration, dryness, and ventilation. The hospital itself is in a healthy situation, and its internal arrangements seem perfect.

M. Levy, the chief physician, describes three periods in the progress of cholera; two of which—those of prodromata, and of reaction—are amenable to a rational system of therapeutics, and the third—the organic or asphyxic—is treated as yet empirically, with more or less success.

1. *Prodromata.* This period extends from the first disturbance of general health, to the appearance of cholera stools or spasmodic symptoms. There are three principal forms, each requiring appropriate treatment. *a. Nervous form*, indicated by headache, vertigo, weakness of the lower limbs, transitory epigastric spasms, transitory impediment to respiration, etc. Treatment: Repose, warm infusions, sudorifics; and if these be insufficient, ipecacuanha in emetic doses. *b. Saburral form*, indicated by *malaise*, sense of weight at epigastrium, foul mouth, anorexia, lassitude, lumbar pains, and cephalalgia. The emetic treatment is successful here, even when, besides these symptoms, there are

some cramps and stools more or less typical of cholera. If there be also *gargouillement*, or ventral intumescence, the heat and pulse being normal, M. Lévy employs laxatives, preceded or not by an emetic; by these means he has arrested the course of some apparently severe cases, in spite of severe symptoms having occurred in addition to those of the premonitory stage. *c. Diarrhœal form*, or *cholerine:* treated by opiates, especially enemata with laudanum, three or four times a day; and ipecacuanha when these fail.

2. *Developed Cholera.* This period has two distinguishing characteristics—tendency to cold and loss of pulse: but there are various other symptoms referable to the abdominal, thoracic, or cranio-spinal viscera, one or more of which may be present, giving rise to a variety in type and treatment.

a. Cyanic and algide form, with thready or imperceptible pulse; or adynamic form. This is the form presented in many sudden attacks. There may or may not have been diarrhœa and vomiting, and the patients present rapid cyanosis, with general algidity, or confined to the face, tongue, and limbs: the skin is pasty, and moistened with a cold, clammy sweat; there is extreme prostration, wrinkling of the face, hollowing of the orbits, etc. The patients make little or no complaint, but fall into a kind of coma which ends in death. In these cases, M. Lévy has recourse to the energetic use of calefacients, by directing streams of hot air on different parts of the body, and administering hot infusions, and stimulating mixtures with acetate of ammonia. In the intervals, he gives hot coffee, or wine of canella. The ptisan which he prefers, is sweetened infusion of balm, with twenty or thirty drops of tincture of canella to the quart.

b. Cyanic and algide form, with predominance of gastro-intestinal symptoms (*vomiting and diarrhœa*). The same external means of restoring heat are employed; but internal stimulants and hot drinks generally increase the vomiting, or, at least, are soon rejected. The internal remedies are, ice in fragments, effervescing lemonade; and the only stimulant which the patients seem able and willing to bear, is coffee. In almost all, who have been much exhausted by vomiting, there is severe pain in the epigastric region, and general abdominal tenderness; obstinate hiccup also supervenes. In these cases, M. Lévy employs, in addition to ice and lemonade, the repeated application of sinapisms to the epigastrium, cupping and dry-cupping, followed by laudanized poultices; if these means fail, he applies a small ammonia blister to the epigastrium, and dresses it with increasing doses of morphia. It may be remarked, in passing, that the blistered surface rapidly heals, and leaves a brownish scar, with thickening of the skin, due to the sanguineous infiltration of the part. In more obstinate cases, trisnitrate of bismuth, in doses of one gramme every hour, up to ten or twelve grammes, has been found successful; it seems first to increase the intervals of, then to suppress, the vomiting. Its action is manifest, if at all, when from four to six grammes have been taken. Diarrhœa and vomiting have been less obstinate in the patients in the Hôpital de Val-de-Grâce than elsewhere. The use of astringents does not seem to M. Lévy to be useful or beneficial; but he thinks that these symptoms are to be remedied by treating the general state of the system.

c. Cyanic and algide form, with predominance of nervous and spasmodic symptoms. This is an important form, and most difficult to treat. The patients,—cold, icy, blue, or only of a bistre-tint, pulseless, tortured by cramps, breathless and anxious, from constriction of the thorax, which appears due, as well as the wrinkled countenance and sunken eyes, to muscular retraction, and who are a prey to jactitation, anguish, and severe pains,—form the greatest number of victims. Though ice-cold, they throw off the bed-clothes; they complain of insupportable heat; the hot air bath becomes a punishment to them, and increases the oppression and anxiety. M. Lévy substitutes for this, jars of hot water, long-continued frictions, which at the same time relieve the cramps, hand-sinapisms, moved up and down the limbs, and the internal use of hot drinks. This is, without exception, the most severe form of the disease, and that in which several new remedies have been unsuccessfully employed; viz: electricity (by Dujardin's apparatus), ipecacuanha, in doses of from two to four grammes, hachisch, extract of nux vomica, and strychnine. M. Lévy employs here the same treatment as he did at the commencement of the epidemic, with the exception of the hot air bath. Externally, he employs frictions of laudanum with turpentine, camphorated oil with laudanum, *baume tranquille* with chloroform, etc. For internal use, he depends more on ether and laudanum than on acetate of ammonia.

3. *Reaction.* Clinical observations and post-mortem examinations have furnished M. Lévy with the key to the treatment of this stage. The forms and complications of reaction are in close relation with the anatomical conditions of the asphyxic stage; and the attentive study of the peculiarities presented by the latter will almost enable one to foretell and calculate on the local tendencies of the former. The cyanic, or algide stage, tends to produce congestions, sanguineous extravasations, ecchymoses, etc.; and when reaction takes place, the organs which are the seat of these lesions, become subject to hypersthenia, excitement, or phlogosis; inflammation even often becomes one of the conditions of recovery. When the organs have been uniformly and moderately congested, and the reaction is gradual and continuous, there is a slight elevation of pulse, with general perspiration, and turbid or increased urine; here the expectant treatment is sufficient. Sometimes the reaction is more violent, but still general; and a kind of inflammatory fever arises, which only requires hygienic treatment and careful watching. But in a great number of cases, congestive symptoms have been confined to the brain, the lungs, or the intestinal canal. Under the first head, are classed secondary encephalic congestions, obstinate headaches, with or without fever, torpidity, most frequently accompanied by vomiting, as in hydrocephalus after cerebro-spinal meningitis; the state of drowsiness and coma which succeeds this; delirium, sometimes furious, sometimes muttering, with intervals of slumber; being in proportion to the degree of injection of the meninges, and of sub-arachnoidean and ventricular effusion. According to the degree of compression of the brain by the distension of the vessels of the periphery, and to the degree of febrile excitement, there are observed the symptoms of meningitis, of typhoid fever, of meningo-cephalitis; and the most frequent is the torpid state, with vomiting and constipation. According to the nature of the case, M. Lévy adopts the semi-recumbent posture, depletion at the base of the skull, derivatives to the digestive canal (Seidlitz water, sulphate of soda, laxative enemata), and revulsives (sinapisms and blisters) to the extremities, and sometimes a blister to the nape of the neck; and in a number of cases, his treatment has been successful. Several cases of reactional pneumonia have been cured by bleeding to about eight ounces, opiate emetics, and blisters. The various abdominal inflammatory complications yield readily to cupping, laudanized poultices, and hygienic means. Severe and persistent pain in the epigastric region has been relieved by the application of ten or twelve leeches. Constipation is, more frequently than diarrhœa, accompanied with ventral irritation, and must be treated by enemata and by means of regimen. Diarrhœa is the ordinary symptom of relapse, and should be carefully sought for, especially as its existence is often concealed by the patients.

HÔPITAL DE LA PITIE. The situation and internal arrangements of this hospital are healthy: but its patients are mostly of the lowest class, from a population decimated by misery, badly lodged and clothed, and ruined by every kind of excess. The modes of treatment, though not completely opposed, present great differences.

M. SERRES considers cholera as a pernicious typhoid affection. The object of his treatment is to resolve the disease into its two principal elements, to master at first the pernicious phenomena, so as only to have subsequently to treat the typhoid fever, deprived of the complication to which it owes its severity. One series of remedies is directed against the vomiting, the alvine evacuations, and the pernicious symptoms of the first period of the disease; another against the characteristic changes of the second, or typhoid period. The first indication is fulfilled by the anti-emetic potion of Riverius, Seltzer water, and citric lemonade, and starch enemata three or four times a day, containing camphor three grains; sulphate of quinine three grains; and laudanum eight drops. The specific treatment consists of daily mercurial inunctions to the abdomen, sometimes repeated several times a day, to the amount of eight or ten grammes of mercurial ointment; and of the administration of the following pills: Æthiops mineral one gramme; powder of tragacanth half a gramme; to be made into four pills with syrup, and taken during the day. In addition, he uses the ordinary means of restoring heat. Opium he employs with moderation, and only in enemata, except in some very rare cases, with painful cramps, where he gives a small dose of opium, with black sulphuret of mercury. He also rarely gives ether in mixtures. The comatose phenomena of reaction are treated with sinapisms, and sometimes, when very intense, by leeches behind the ears, and laxatives.

M. Piorry. According to M. Piorry, the cause of cholera is a poison *sui generis*, the effects of which are varied by the influence of septic agents. The intrinsic cause of cholera cannot be remedied, but we may greatly modify the conditions of septicity which give the disease its most severe character. His treatment of the intrinsic cause is mainly prophylactic, by withdrawing healthy individuals from the epidemic influence, or removing those who labour under the premonitory symptoms from their confined and ill-ventilated habitations. The disease, once developed, exercises its influence at first on the blood, then on the digestive canal. The action on the blood he treats by demulcent drinks, exposure to pure air, and copious water lavements. The gastro-intestinal symptoms are treated by large quantities of infusions, especially tea, as long as vomiting continues, and by albuminous drinks (whites of eggs beaten up in water), to remedy the incessant loss of albumen. M. Piorry does not employ evacuants, even though they seem indicated; as he thinks them calculated to increase the debility of the patient to a dangerous extent. If the gastro-intestinal evacuations be obstinate, he applies bladders of ice to the whole of the abdomen, and hot cloths at the same time to the chest, and accompanies these with enemata of iced water. In the algide stage, he uses the vapour bath, tea, with alcoholic spirit, and copious injections of water. The indication here, according to M. Piorry, in this stage, as well as in the preceding, is to throw as much water as possible into the blood. For the phenomena of reaction, he has no fixed treatment; but varies it according to the pathological conditions of the organs, as they manifest themselves.

M. Gendrin considers that the disease consists of five principal orders of phenomena, which are successively developed; viz., the premonitory symptoms, which, according to him, are constant; the symptoms of excessive secretion, at the commencement of confirmed cholera; the inspissation of the blood by the loss of its liquid constituents; the suppression of all the secretions; and, finally, febrile reaction in various forms. The indications founded on these five orders rest: 1. In the character of the precursory symptoms: which are most commonly diarrhœal, much more rarely nervous or vertiginous; 2. In the state of gastro-intestinal excessive secretion, which must be arrested; 3. In the changes which this secretion produces in the blood, which must be modified so as to maintain or re-establish a healthy circulation; 4. In the febrile complications of reaction, which must be moderated; 5. In the consecutive congestive phenomena, which are to be prevented. In the diarrhœal form of the precursory symptoms, M. Gendrin prescribes emeto-cathartics, as ipecacuanha, followed by a saline purgative, with the object of modifying the excessive intestinal secretion. If the precursory symptoms consist in vertigo, headache, general *courbature*,* without diarrhœa or vomiting, he prescribes a bleeding, abstinence from food, or a very moderate diet, demulcents, and a small dose of opium. In both cases he orders rest in bed, to favour the action of the skin, and to keep the body comfortably warm. In confirmed cholera, the first indication is to moderate the state of secretory turgescence of the muciparous crypts of the intestinal mucous membrane; to fulfil this, he employs bleedings at the commencement. If the disease have some intensity, he prescribes, in addition, opium in large doses, in solution or in tincture. If the evacuations have been sufficiently copious to produce symptoms of cyanosis, he has recourse to stimulating liniments, with the object of restoring the circulation, and of rousing the sensibility and the exhalant function of the cutaneous surface. If, in spite of these means, the algide stage sets in, M. Gendrin employs vapour or hot-air baths only where the skin appears capable of reacting and perspiring. In the pronounced algide period, he continues the opiates, if the alvine secretions be still abundant: but considers that it is of most consequence to use tonic or simple stimulants, but not alcohol. In this period, he also depends greatly on external stimulants, as frictions, sinapisms, and blisters. With the object of giving play to the circulation, he prescribes bleeding; but as the veins allow only a small quantity of blood to escape, he leaves the vein open, and employs friction in the direction of the returning current of blood, until he has obtained some spoonfuls of blood. In the stage of reaction, the treatment of M. Gendrin differs, according as it is more or less complete and energetic. If it be incomplete, and the patient be much debilitated, and if the secretions, especially that of urine, be not re-established, he continues the use of internal and external stimulants, with the addition of sinapisms; if, on the contrary, reaction be energetic, and coma be threatened, a small bleeding is practiced; if it be well established and moderate, he confines himself to the expectant treatment. The obstinate vomiting, extreme thirst, and hiccup, so frequent in this period, are treated by ice.

---

* There is no English substantive by which the French word "*courbature*" can be adequately translated. "*Je me sens tout courbatu*" means, "I feel sore all over."

MM. Clement and Piedagnel generally employ the *symptomatic* method of treatment, with some modifications at the stages of commencement and reaction. At the commencement of the disease, M. Clément employs, in addition to astringents and opiates, leeching to the fundament. In the algide period, he uses stimulants with caution, for fear of exciting a too energetic reaction. In the precursory diarrhœa or cholerine, M. Clément would give ipecacuanha, but has not yet had an opportunity. The method of M. Piedagnel resembles that of M. Clément, except that he prefers a small bleeding to leeches to the anus. The characteristic feature of his treatment is, the employment of copious bleedings as soon as reaction sets in, so as to combat or prevent symptoms of cerebral congestion.

Hôpital Saint-Louis. This hospital is situated in a populous quarter, and its structure is generally salubrious; but the patients are generally in a bad hygienic condition; hence the cases of cholera are numerous and severe.

M. Gibert employs, almost exclusively, the rational or natural method, which consists in fulfilling such indications as present themselves, and in following the course which nature points out in effecting a spontaneous cure. During the precursory period of diarrhœa, he employs rest, dietetic treatment, demulcent drinks, and opiate enemata. In the algide period, he uses hot aromatic drinks at first, followed by gum water with Seltzer water and ice, poultices with laudanum, narcotic enemata; and, at the same time, sinapisms, hot cloths, and frictions with laudanum over the regions troubled with cramp, so as to excite the circulation in the periphery, and to arrest the evacuations. In the stage of reaction, he applies cupping glasses to the chest and epigastrium, if there be ever so little dyspnœa, or tendency to asphyxia or coma. He does not employ bleeding, emetics, purgatives, nor specifics of any kind; and even abstains from the use of hot air or vapour baths, which seem to him as much contraindicated as in asphyxia from drowning. Cases of cholerine are treated in the same way, and, according to M. Gibert, with uniform success.

M. Devergie. The treatment adopted by M. Devergie does not entirely consist, as some imagine, in the use of truffles. He appears to treat each symptom by its appropriate remedies; cold, for instance, by the hot air bath and internal stimulants; vomiting, by ice and Seltzer water; alvine evacuations, by opiate enemata. In some cases he has tried blistering of the epigastrium, by means of the long-continued application of tar ointment.

A short time after the first appearance of cholera in Paris, M. Devergie, observing that persons who eat truffles are generally constipated, conceived the idea of employing them in the diarrhœa of cholera. He employed at first a simple decoction, made by boiling one hundred and twenty-five grammes (about four and a half ounces) of truffles, cut in small slices, with five quarts of water.

This forms a ptisan which, when strained, is colourless and slightly opaline; it has no disagreeable odour; and, when sweetened, has an agreeable taste to the patients. More recently, he has formed a distilled water from them, which is charged with the odour of the truffles. By pounding the truffles in a mortar, and treating them with alcohol, he has formed a homogeneous mass, from which he proposed to form pills, by mixing a little sugar with the mass, and afterwards enveloping them in a layer of gelatine. Both in cholerine and in actual cholera, M. Devergie employed truffles as a remedy for vomiting and diarrhœa; and says that some cases seem to have suddenly recovered on the cessation of the diarrhœa and vomiting. He has, however, completely abandoned this remedy, which failed to answer his expectations.

M. Moissenet employs the saline treatment, by chloride of sodium, to which we have already referred, as employed at the Hôtel-Dieu and La Charité. In addition, he gives a ptisan of bicarbonate of soda, two grammes to the pint.

Hôpital Beaujon. This hospital is one of the most salubrious, but its inmates are mostly from the villages about Paris, so that the hygienic conditions of the hospital are frequently counterbalanced by misery and insufficient food.

M. Bouvier's mode of treatment is as follows. 1. To moderate the evacuations by means proportioned to their intensity, and to the exhaustion which they produce; thus, by mouth, syrup of quinces in rice-water, at the commencement; by the rectum, enemata of decoction of marshmallows, poppies, or of starch, with some drops of laudanum. Against vomiting, he uses Seltzer water, the potion of Rivierus, opium in small, repeated doses, ice, sinapisms to the epigastrium, and a small quantity of such drink as may be agreeable to the patient. Slices of orange or citron are applied to the lips and tongue to allay thirst, if all drinks, and even ice, be rejected. Cold water is given in small quantities, if the patients prefer it. 2. To sustain the power of the system and produce derivation from the intestines to the skin, he employs light tonic drinks, stimulants, external revulsives, cutaneous irritants; infusion of tea with some spoonfuls of rum, coffee, wine of Bagnols with water, punch; sinapisms, external heat, frictions with liniment of ammonia and cantharides. Stimulants, if too powerful, exhaust the rest of the system by producing too much cerebral irritation; and should be employed with caution. 3. To prevent and combat cerebral congestion in the stage of reaction, M. Bouvier prefers cutaneous revulsives, sinapisms, blisters to the nape of the neck and thighs, with support of the powers, to bleedings. He also adds antispasmodics, and opium if there be delirium or cerebral excitement; and leeches sometimes, but only when specially indicated.

M. Legroux. The treatment of cholera pursued by M. Legroux is the following: 1. To restore warmth, and reanimate the patient, he employs hot cloths, in preference to bottles of hot water, which appear to him more hurtful than useful. At the same time, he gives hot drinks of tea with a little rum, etc.; often also with a little syrup of ipecacuanha. These means generally produce prompt reaction. 2. When reaction is established, he gives cold iced drinks, which the patients take with eagerness. 3. At the same time, he gives a mixture with a small proportion of opium, to be taken by spoonfuls, and followed immediately by pills of tannin, to calm the nervous symptoms and diminish the intestinal excretions; also enemata containing laudanum and tannin, several times in the day. 4. When the patient has a certain amount of strength of pulse, he often practices bleeding at the commencement, which he does not hesitate to repeat if there be febrile reaction, especially when there is coma. The blood which flows is generally glutinous: local bleedings by cupping or leeches are often employed by him in cerebral complications, as well as blisters to the lower limbs. 5. In some cases, where the dull intestinal sound indicates their being filled with the cholera matters, he has employed, with advantage, castor oil, alone, or with calomel. 6. Having observed in some cases a sort of alternate remission and exacerbation, he adds sulphate of quinine to the opiate enemata. 7. In cases of obstinate vomiting, he applies a blister to the pit of the stomach. 8. Obstinate diarrhœa is treated by enemata containing a solution of nitrate of silver. 9. As to most of the remedies whose success has been declared wonderful, he has almost abandoned them, convinced that the modifications introduced into the system by cholera can by no means be cured by a single specific.

HÔPITAL DE GROS-CAILLOU. The general conditions of this hospital much resemble those of the Hôpital de Val-de-Grâce.

M. DURAND, at the commencement of the epidemic, employed hot air baths, stimulating aromatic infusions with acetate of ammonia, sulphuric ether, and laudanum, stimulating frictions, sinapisms, etc. When reaction had commenced, ipecacuanha in fractional doses, with opium; and when it was established, purgatives by mouth and in enemata, and sanguineous depletion when the congestive symptoms were very intense. But, having perceived that the most severe cases were those unattended with vomiting, and that the administration of stimulants tended to put off the excitement of vomiting, by reason of the increasing inertia of the stomach; and also having observed that laxatives, given too soon after the algide stage, as well as the cold drinks to promote their action, tended to maintain the algide state, he has modified his treatment, so far as it relates to this stage. The patient, on admission, is clothed in a shirt of swanskin (*molleton*), and woollen stockings; and has administered to him the hot air bath, and two grammes of ipecacuanha in two doses. After this, to favour vomiting and promote diaphoresis, M. Durand gives a mixture of infusion of ipecacuanha with tea and spirits, to be taken very warm. Diaphoresis is generally soon established. He does not fear to return to the use of ipecacuanha, if the patient still complain of a sense of fulness in the stomach. He considers it advantageous to provoke vomiting, whenever there is nausea. If reaction do not come on after the use of emetics, he prescribes fifteen grammes at a dose of the following mixture: root of gentian, of elecampane, of angelica, of acorns, each forty-five grammes; Holland gin, one quart; macerate for three days. He also gives a tablespoonful of the following, every quarter of an hour: distilled mint water, one hundred grammes; sulphuric ether, four grammes; acetate of ammonia, four grammes; and, if there be cramps and agitation, laudanum, one gramme. This is alternated with very hot tea, to which spirits are added. For ptisan, he gives infusion of orange with acetate of ammonia. When moderate reaction is established, he withdraws the heating drinks, and gives hot tea without alcohol. When it is excessive, he gives purgatives of Seidlitz water, or manna with sulphate of magnesia, followed by large quantities of sweetened barley water, or sulphate of magnesia in cold tea. For some time, he has employed lemonade or citrate of magnesia, in place of Seidlitz water. At the same time, he gives daily three enemata with senna and sulphate of soda. He repeats these purgative remedies if coma sets in, and at the same time applies lotions, containing water, camphorated spirit, and salt, to the head. He also applies leeches to the temples, and gives salt in barley water; and, under its influence, the tongue, though clammy or dry, has become freely moist. The obstinate continuance of vomiting is treated by Seltzer water, sometimes combined with alum. Obstinate diarrhœa has been arrested, in some cases, by the administration of enemata containing acetate of lead. Where comatose symptoms have been manifested in paroxysms, M. Durand prescribes sulphate of quinine in mixture or in enema.

M. WORMS. In the algide stage, although the means used by M. Worms are very numerous and varied, their general character is that of being powerfully stimulant. He gives a mixture consisting of sulphuric ether, fifteen grammes; liquid ammonia, three grammes; tincture of capsicum, one gramme; treacle, fifteen grammes; camphor, two decigrammes; infusion of mint, one hundred and twenty grammes. He also applies fomentations to the limbs of a solution of one and a half gramme of camphor in one hundred and twenty grammes of rectified spirit, and three hundred grammes of acetic acid: and a plaster to the epigastrium, consisting of treacle, fifteen grammes; balsam of Peru, fifteen grammes; and essential oil of mint, eight grammes; to be laid upon a hot brick. He gives, also, infusion of limes and of mint as a drink; hot applications to the feet, etc. This treatment is generally preceded by the administration of an emetic of two grammes of ipecacuanha. When reaction is at hand, in order to prevent cerebral complications, M. Worms applies to the head, by means of flannel, the following lotion: camphorated spirit, one hundred and fifty grammes; liquid ammonia, twenty-five grammes; hydrochlorate of ammonia, forty-five grammes; dissolved in infusion of arnica, one hundred and ninety grammes. When reaction is established, he substitutes for the internal stimulants a mixture containing spirits of balm, and camphor; and, at a later period, a mixture of nitrate of potash four grammes, camphor two decigrammes, in one hundred and twenty grammes of any proper vehicle; or, rather, a mixture containing carbonate of ammonia and camphor. He uses laxative enemata, in proportion to the intensity of the congestive phenomena.

The following table shows the comparative mortality at the seven hospitals, of which we have described the treatment, up to the fifth of May:—

	No. of Cases up to May 5.	Deaths.	Recoveries.	Under treatment.	Mortality per cent.	Recoveries per cent.	Ratio of recoveries to deaths.
Hôtel Dieu	415	210	118	87	0·50	0·29	0·58
Hôpital de la Charité .	274	154	57	63	0·56	0·21	0·37
——— de Val de Grâce	227	57	98	72	0·25	0·43	1·72
——— de la Pitié . .	272	137	87	64	0·50	0·32	0·64
——— Saint-Louis . .	237	113	46	78	0·47	0·19	0 40
——— Beaujon . . .	133	83	19	31	0·62	0·14	0·22
——— Gros Caillou .	270	90	87	93	0·33	0 32	0.97

London Journal of Medicine, June 1849.

---

68. *Results of the Various Kinds of Treatment of Cholera adopted in Russia.*—Dr. Mackenzie, Senior Surgeon to the Naval Hospital at Archangel, in a paper in the *London Medical Gazette* (April 1849), states that, "In the choleraic seizures in the Naval Hospital of Archangel, various methods were used with partial success. The practice of the Anglo-Indian surgeons was chiefly confided in, and in my opinion is most deserving of confidence. There are cases, or rather there is a period, in epidemic cholera, beyond which medical art seems to be of no avail whatever: if a rare case of recovery from this state do occur, it is more from some latent strength of constitution than from medical treatment.

"We have found *bleeding*, when practiced early, of unequivocal advantage, especially in robust subjects; but in order to secure this advantage, stimulants must be administered immediately afterwards, otherwise a relapse into the same state of congestion is apt to follow. For this discovery we are indebted to the Anglo-Indian surgeons. Bleeding practiced later, when the vital energies were far reduced, was found of no avail whatever. *Emetics* of ipecacuanha were frequently given as a safe stimulant to effect a reaction, and restore the blood to the surface; I have seen an emetic bring up food, though there had been vomiting and purging in a violent degree some hours previous to its administration. The *water and vapour baths* were used extensively, but I cannot say anything in their favour; if they restored in some measure the circulation, it was only for a short period, a collapse seemingly greater than before following their use. *Frictions of oily liniments* containing camphor, oil of turpentine, capsicum, &c., were found of more certain benefit, as also *sinapisms*. I have given, after bleeding, an emetic in a tumblerful of French brandy with advantage. To restrain the violent watery purging, opium, sugar of lead, and ipecacuanha combined, in the proportion of one grain each, together with a quarter of a grain of camphor, act admirably.

"The much-vaunted *Elixir of Voronèje* was tried and found to fail, as also all other medicines of the same class.

"*Creasote* was tried in St. Petersburg, and found useful to relieve the violent vomiting. The same medicine has been tried at Archangel rather extensively, and is looked upon by Drs. Condy and Schnee as a something approaching to a specific. They prescribe it in all stages and in all grades of the disease, as well as to prevent it. Owing to the epidemy being on the decline when it was brought forward by these gentlemen, I have not had sufficient opportunities to test its comparative merit. Making, however, a very large allowance for enthusiasm, &c., I consider it as deserving of further trial in the hands of competent and impartial judges. It appears to me to be best suited, in very small doses, to slight attacks. When there are great congestion and irritation of the stomach and bowels, it cannot fail to do mischief.

"I have tried it in one case, which was of great severity, in the manner recommended, namely, half a drop every half hour; and I found that, after every dose, the patient felt a burning pain in the stomach, retched, and called for drink in order to throw it up again: seeing this, I discontinued it, the patient having taken two drops and a half. The man ultimately recovered under the use of calomel, opium, ipecacuanha, and camphor, allowing him effervescent draughts *ad libitum.* I was not a little amused to hear this, my case being afterwards brought forward as a proof of the efficacy of creasote!

"A trial has been made of it in our hospital, and the following was the result:—In eight cases, three slightly attacked recovered under its use, whilst four of a more serious grade died in a typhoid state; in the eighth case, which was of choleraic diarrhœa, it aggravated the disease, which, however, easily yielded under the use of sugar of lead and ipecacuanha.

"Mr. Dashkevitch, who closely watched the effects of the medicine, is of opinion that it seems to do good in slight cases, but in the severer attacks it is either inefficient or pernicious.

"Dr. Voitzohovsky has made use of it in his private practice in nine cases, of which four were with every symptom of cholera, and five with diarrhœa. Of the real cholera cases, three died, and one recovered; the five cases of diarrhœa did well, but in one of these, irritation of the stomach was caused by the remedy, which was in consequence laid aside for other means. In the Naval Hospital, this remedy has again been tried in a case of some severity: it was continued for 32 hours without the slightest amelioration, and at last bloody stools came on, with tenesmus and pains over the whole abdomen, which were followed by death.

"A trial has been made of a method in great reputation throughout Russia, which goes by the name of Dr. Sledzievky's; and I confess that I have seen several cases recover under its use, but whether they would have recovered without it, I cannot say. It consists of the following: half a tablespoonful of culinary salt is given to the patient in a tumblerful of cold water; he is then enveloped in a sheet soaked in cold water in which culinary salt has been dissolved, and six men are employed to rub him with it for a quarter of an hour, when the body, especially the chest and back, assumes a red colour; he is after this wiped quite dry, and wrapped in woollen blankets; every five minutes he is made to swallow a tablespoonful of salt and water, in the above-mentioned proportions, and for drink is allowed *cold water, with lumps of ice in it.* Besides, cold lotions are applied to the head, and injections of salt and water are administered. When the choleraic symptoms have subsided, the case is treated on general principles.

"The common people use a method of their own, which has also been attended with more or less success. They take the patient to the Russian bath, rub him well with tar and oil, after which they cover him up in sheep-skin furs, and give him half a wineglassful of oil of turpentine, in the same quantity of olive oil, or they give him a tablespoonful of tar.

"In the district of Shenkursh, they have used lashing the surface with fresh nettles, a method as original as it is likely to be useful.

"I understand that the peasants of the island of Mudyuga, situated at the mouth of the N. Dvina, observing no benefit from warm baths, but rather the contrary, took the opposite extreme, and used *rubbing the surface with ice and snow* from their cellars, with success.

"In this country, as far as I know, no fair trial has been made of *saline injections per venas;* nor can any benefit accrue from their use, unless in those cases where there has been great loss of the watery parts of the blood, and where, in consequence, the vital fluid has become too thick for circulation.

"In Moscow, a trial was made in this way with the serum of the blood of a goat, under the impression that the albumen of the blood is carried off by the bowels, and, I need hardly say, without success."

ANÆSTHETIC AGENTS.

69. *Death from Chloroform—Means to be employed to prevent a fatal effect from an over-dose.*—Dr. Snow read to the Westminster Medical Society, March 31st, a paper on the fatal cases of inhalation of chloroform. He said that, soon after the inhalation of ether was introduced, it was reported to have caused death in two or three cases; but, as the effects of ether became better known to the profession, it became evident that these deaths, which occurred three or four days after severe operations, could not be attributed to the inhalation. Chloroform was much more powerful than ether; the quantity of it required to induce insensibility was less than one-tenth as much by measure as in the case of ether. Viewed in this manner, it was more than ten times as strong; but to ascertain their comparative physiological power, when inhaled in a similar manner, their respective volatility requires to be taken into account. If a patient breathed air saturated with vapour of chloroform at 60°, twelve ordinary inspirations of twenty-five cubic inches each would suffice to produce the usual amount of insensibility required in a surgical operation, but it would require thirty-two similar inspirations of air saturated with vapour of ether, at the same temperature, to produce a like effect; therefore chloroform was nearly three times as strong as ether when inhaled in the same way, and this was one of the chief causes of the accidents which had happened. When an animal was allowed to continue breathing air charged with vapour of chloroform, after it had become completely insensible, the respiration shortly ceased; but if the air did not contain more than about five per cent. of the vapour, the heart continued to pulsate for some little time after the respiration had ceased, and the circulation was finally arrested for want of the respiration, as in all other cases when death took place by apnœa. During the interval that the heart continued to beat, the animals were easily resuscitated by artificial respiration. When, however, an animal was made to breathe air containing a greater quantity of vapour—ten per cent., or upwards—death took place in from half a minute to two minutes, and the respiration and circulation ceased about the same time; the reason of this was, that there was sufficient vapour in the lungs, at the moment the breathing stopped, to paralyze the heart as soon as it was absorbed and added to that already in the blood. Under these circumstances, it was evident that artificial respiration could be of no avail, and there was every reason to believe that this was the condition of the patients in the greater part of the fatal cases of inhalation of chloroform. To gain a clear idea of the cause of these accidents, it was necessary to consider the quantity of chloroform in the blood and in the lungs under different circumstances. Thirty-six minims was the average quantity required to be inhaled, to induce insensibility in the adult, but only about half of this was absorbed, the remainder being expired again. He had previously related some experiments undertaken to ascertain the exact proportion of chloroform in the blood in the different degrees of narcotism, by which it was shown that about twelve minims was the quantity in the second degree—the stage in which the mind wandered and voluntary motion was unsteady; about eighteen minims in the third degree—the usual stage in which operations were performed; about twenty-four minims in the fourth degree—the stage of complete insensibility with relaxation; a little more than thirty minims, the quantity that would be required to suspend respiration; and thirty-six or thirty-seven minims to arrest the action of the heart. The quantity of air usually present in the lungs was about 250 cubic inches. If a patient were breathing air saturated with chloroform at 60°, this quantity of air would contain thirty minims before it entered the lungs; but as absorption and inhalation went on together, probably only from fifteen to twenty minims would be present in the lungs at one time during ordinary respiration, and if the chloroform were removed from the patient's mouth, part of this would be expired again, and not more than ten to fifteen minims would be absorbed into the blood after the discontinuance of the inhalation; but this, if the patient were already insensible, might so increase the narcotism as to lead to a fatal result. The time during which the narcotism might continue to increase after the inhalation was discontinued, owing to the

absorption of the vapour remaining in the lungs, was about twenty seconds, as he had stated on a former occasion. These considerations would make it evident, that, unless some systematic means were taken for having the vapour largely diluted with air, so that its effects might be gradually induced in not less time than about two minutes—and no great quantity of chloroform could ever be present in the lungs at one time—fatal accidents would be liable to occur. Unfortunately, Dr. Simpson, to whom they were indebted for the introduction of chloroform, recommended it to be used on a handkerchief, and to this mistake, must chiefly be attributed the fatal cases that had occurred; for the handkerchief, of course, did not afford any means of regulating the strength of the vapour. Dr. Snow then related the particulars of the fatal cases, which he believed were seven in number—that of Hannah Greener, near Newcastle; that of Mrs. Simmons, in Cincinnati, U. S., which he considered was the only one in which any form of apparatus had been employed, and in that case the dentists who administered the chloroform were not medical men. The remaining cases were a young woman at Hyderabad, a female patient at Boulogne, a young man at Govan, in Scotland, a boy, seventeen years old, at Lyons, and a labouring man recently, in Westminster; he did not include the deaths of two persons from taking chloroform when no one was present, as he was considering only the medical employment of the agent; and he had not included the case of Mr. Badger, who, he considered, did not die from the effects of chloroform—first, because he scarcely inhaled any, the inhaler not having been applied to his face; and secondly, because, according to the evidence of Mr. Robinson and his servant, there were no symptoms either of narcotism or distress, even for a single second, before his death; but his head and hand dropped, and he showed no signs of life afterwards. He considered that the case was one of syncope, through fear either of the operation or of the inhalation, concerning which he had been led to entertain apprehensions, and that the fatty degeneration of the heart under which he suffered rendered the syncope fatal. In nearly all the cases of death from chloroform, the insensibility had been induced within a minute, and in every case, the dangerous symptoms set in very suddenly, proving that the vapour had been inhaled of great strength. In the five cases in which an examination was made after death, there was no particular congestion of the brain, the lungs were greatly congested in two cases, and more or less so in the other three. The cavities of the heart were quite empty in the American case, and in that at Boulogne; but in these instances, strong inflation of the lungs had been practiced for a considerable period after death, and Dr. Sibson had found that the heart became emptied after death, during experiments with artificial respiration in the human subject. In these two cases, air was found in the veins; in that at Boulogne, in the pulmonary as well as the systemic veins. The members of the Académie de Médecine of Paris were inclined to attribute death to this cause, supposing that air could not reach the veins by rupture of the lungs after the left ventricle had ceased to act; but if artificial respiration could empty the heart of blood, it could also press out the air which would reach the left cavities of the heart by minute ruptures of the air-cells, and pulmonary veins, and the arteries possessed the power of expelling their contents into the veins after death, as was proved by their being nearly always found quite empty. The recent case in Westminster showed the uncertainty of the handkerchief in a striking manner, since half an ounce of chloroform was expended in the first instance, without producing insensibility, but little of it getting into the lungs: and then two or three hours afterwards, the same gentlemen, with a similar quantity, not only induced insensibility, but unfortunately administered an over-dose. Whilst he did not wish to blame the persons in whose hands this case had happened, and who had high authority for their method of proceeding, he could not agree in the verdict, that chloroform caused death when it was properly administered. If the vapour were sufficiently diluted with air, and its effects carefully watched, he considered it quite incapable of causing death. At the conclusion of his paper, Dr. Snow performed two experiments on linnets, to show the different effects of vapour of chloroform, according to the quantity of air with which it was diluted. In the first experiment, twelve grains of chloroform were put into a covered glass jar, containing 100 cubic inches, when it was converted into vapour, of which it would form about eight cubic inches, displacing as much air; a bird was introduced; it was quickly affected, and was dead in half a minute. The same quantity of chloroform was then diffused in a similar manner, in a jar holding 600 cubic inches, and another linnet put in; it became gradually insensible, and was removed at the end of about three minutes, and recovered completely in two or three minutes. Dr. Snow said that the vapour required to be rather stronger than this to act as rapidly in larger animals; but that there was the same difference in its effects from a similar difference of strength.

Dr. Sibson said that Dr. Snow had referred to his observations on the mode in which the heart was paralyzed; and on the effect of artificial respiration, by distension of the lungs in emptying the cavities of the heart. It was an ascertained fact, from the history of the cases of death from chloroform, that the heart ceased to beat in those cases at the same time that breathing ceased; and in the late fatal case at Lyons, respiration continued after the cessation of the heart's action. Now the experiments of Mr. Wakley and Dr. Snow had shown that in the lower animals the heart continued to pulsate from one to two minutes after respiration had discontinued. Whence this remarkable difference? Why is it that in man, under chloroform, the heart's action should usually cease before respiration, while in the lower animal respiration should usually cease before the heart's action? This question it was difficult, but, in a therapeutical point of view, important to answer. Opium, in poisonous doses, excited in the lower animals constant tetanic contractions; but it did not do so in man. This difference was clearly due to the superior control exercised by the brain, by the mind of man over the reflex or spinal actions, his brain having a higher development, a greater controlling power, than the brain of any lower animal. Could the sudden action of chloroform on the heart of man be accounted for, physiologically, in the same way? Influenced by sudden mental depression, a woman will fall into syncope, pallid and pulseless, to the ground; the heart's action suddenly ceases under the sudden influence of the mind. A French writer has recently suggested that syncope, the sudden cessation of consciousness, may be the cause of the sudden cessation of the heart's action under chloroform. It appeared to the speaker that this view was supported by physiological analogies. Another mode in which the action of the heart might be destroyed, was the production of paralysis of the heart by the immediate action of the chloroform on its fibres, the chloroform (as he had stated in a paper, from which Dr. Snow had quoted) being sent more rapidly, and in greater concentration, to the muscular fibres of the heart, than to any other part of the body, the lungs excepted. This view, which had much to recommend it, was in some measure opposed by the fact that the heart's action continued after breathing had ceased in the lower animals. From the valuable observations of Dr. Snow, it appeared, however, that sometimes, even in the lower animals, the heart's action ceased with respiration. This, however, may be due to the *third* way in which the heart's action may be arrested by the action of chloroform. Dr. Whytt found that under the action of opium the heart ceased, the right cavities being excessively distended. On lessening the blood in the cavities, the heart resumed its action. Sir B. Brodie observed the same phenomena under the action of tobacco, and he kept up the renewed heart's action by artificial respiration. Drs. Reid, Cormack, and Lonsdale have made similar observations in animals poisoned by creasote and prussic acid. In these cases the heart's action has not been arrested by paralysis of its muscular fibre, but by overwork; it has had more blood in it than it could send out, and more resistance to overcome, in the pulmonic capillaries, (for there is resistance to the circulation in both pulmonic and systemic capillaries, under the action of narcotics and of asphyxia,) than it was capable of overcoming. As yet, we had had no opportunity of deciding, by post-mortem examination, whether the death of the heart had been occasioned in either of the two last methods, as in all the cases artificial respiration, by inflation of the lungs, had been performed, and thus the blood had been expelled from the cavities of the heart. In all the cases, the heart's cavities were empty, or nearly so; and that this was due to the artificial inflation of the lungs, was proved by the speaker's experiments, referred to by Dr. Snow. In constructing diagrams of the position of the ribs and internal viscera, he first took a diagram before the inflation of the lungs, and then another after inflating the lungs to the full, and he always found that, unless the vena cava was tied, the heart was nearly emptied by the inflation: this was due to the pressure exerted by the expanded ribs on the distended lungs, which in their turn pressed upon the heart, and which was also compressed by the sternum and the diaphragm. Dr. Sibson considered that artificial respiration by inflation was inadmissible in these cases, for the reasons just stated; still less was M. Ray's plan admissible, by the alternate compression and relaxation of the chest and abdomen by a many-tailed bandage; as, under the abdominal pressure, the contents of the stomach would be pressed out through the cardiac orifice, ascend the œsophagus to the pharynx, and regurgitate into the larynx and trachea, the vocal cords being paralyzed. He had contrived a plan of performing artificial respiration, which had been suggested to him in a case of poisoning by opium, in which Dr. Gaskell had performed artificial respiration by placing plasters over the ribs, and, through their means, by drawing upon and expanding the walls of the chest from without, somewhat on the principle of the boy's leather sucker. The speaker had a leaden breastplate made, with the handle; this was covered with an adhesive substance, welted caoutchouc, and was thus made to adhere to the skin over the sternum; on drawing this forward, the chest was somewhat expanded, while on pressing it back, some air was expelled from the lungs; and so, by alternate suction and pressure, an artificial respiration was kept up without inflating the lungs. The amount of air so taken into the lungs was inconsiderable, but probably enough for the purpose, should artificial respiration be required for persons under the extreme action of chloroform.

Mr. Gream would still contend that there was much uncertainty respecting the action of chloroform, and the deaths and casualties attending its administration proved this. Notwithstanding the experiments on animals, as Dr. Sibson had observed, the effects on the human subject were different. Dr. Snow had objected to the case of Mr. Badger being one of death from chloroform; but he would ask—Would Mr. Badger, or the other persons objected to by Dr. Snow, have died unless chloroform had been used? Mr. Gream proceeded to rectify some mistakes into which he considered Dr. Snow had fallen, with respect to the detail of some of the cases, and contended that the death in every case was due to ether or chloroform. He particularly alluded to the fact of Mr. Badger having been in good spirits immediately before his death: this was evidenced by his saying the chloroform was not strong enough, and requesting to be supplied with more. Now, he (Mr. Gream) contended that Mr. Badger had then inhaled sufficient to kill him, but the effects of the medicine developed themselves suddenly, and showed the danger and uncertainty attending its administration. Mr. Gream then mentioned several cases of deaths from chloroform or ether, and death from either of these agents was the same in regard to the arguments adduced by Dr. Snow. Among these cases, he mentioned an instance of the removal of some glandular swellings from the axilla of a woman who insisted upon inhaling chloroform. She died immediately. He related another case, lately reported in *The Lancet*, as having occurred at the Hôpital Beaujon, of death immediately after amputation of the thigh, in which chloroform was used. He related some other fatal cases; two, in which convulsions took place: one continuing twenty-four hours; the other, three hours; in the case of a lady with twins, chloroform was administered with the last child; the woman died in half an hour. A case of operation at Birkenhead; death in half an hour. He contended that harm was done by telling the profession and the public that no danger attended the use of chloroform. He was in favour of its use in operative surgery, in which it had been employed in thousands of cases, and in which, if it had destroyed two or three lives, it had saved hundreds; but he did protest against its use in cases of natural labour. It was wrong to give it to women who would not die without it. Mr. Gream then detailed a great number of cases in which its use had been attended with fatal or disastrous results, when given either to relieve the pain of labour, or for other purposes.—*Lancet*, April 14, 1849.

70. *Chloroform.*—Dr. John Snow, in some interesting remarks on the discussion respecting chloroform in the French Academy of Medicine, communicated to the *London Journal of Medicine* (April, 1849), states that the vapour of chloroform, when inhaled of a certain strength, is just as sure to cause sudden death without premonitory intoxication or insensibility, as it is to cause its ordinary beneficial effect when inhaled of another strength, or to fail altogether of its desired action, if diluted beyond a certain point. "I have several times made animals—small birds, mice, and rabbits—breathe air saturated with vapour of chloroform at the ordinary temperature of the atmosphere, and the consequence has always been, that, after attempting for a few seconds to escape from the capacious jar in which they were inclosed, they suddenly exhibited signs of distress, and died without any interval of intoxication or insensibility, in periods varying from less than half a minute to a minute after their first exposure to the vapour. In these experiments, not more than one-sixth part of the air was displaced by the vapour diffused through the remainder. The vapour of chloroform never acts, as supposed by the Commission, by excluding the air, and so producing asphyxia. This is physically impossible. The same quantity of vapour of ether in the air causes a much slighter effect; and, of some vapours, a scarcely appreciable influence, even when the air is quite saturated with them. Chloroform acts by its narcotic properties alone; and when inhaled of the strength employed in the above experiments, it paralyzes the action of the heart at the same time as the respiratory movements. In two experiments of this nature, previously related,* I found the blood in the lungs still florid, immediately after death.

"In the case at Boulogne, artificial respiration was performed for upwards of an hour after death, and with force enough to cause permanent dilatation of the air cells. At the subsequent inspection of the body, air was found in the pulmonary veins, in the heart, in the right carotid artery, and in the veins generally; a little frothy blood being found at the orifice of the vena cava. The conclusion of the report which has been adopted by the Academy, is, that death was probably caused by this mixture of gas with the blood. The report does just notice the idea that the air might have entered during the artificial respiration, but adds that this would not explain the cause of death, having prejudged that it was not the narcotic action of the chloroform; and goes on to state that the froth at the orifice of the vena cava proves that the air entered during life, entirely overlooking the fact (and I do not see it alluded to by any of the speakers), that the froth would be produced by the churning of the blood backwards and forwards in the large vessels, during the artificial respiration which had introduced the air. The Commission suppose that the air or gas was suddenly developed in the vessels by some unknown cause, and curiously the speakers who oppose their conclusion, admit this sudden evolution of gas, but attribute it to the chloroform—to a peculiar action of ether on the blood. This is the weak point in their argument, for M. Malgaigne justly replies that this is only hypothesis.

"One fact of importance has been brought to light by this inquiry. In the report previously published, it was stated that not more than from fifteen to twenty drops of chloroform had been employed; but by a judicial examination of what was left in the bottle, it was found that from five to eight grammes had been used—from 77 to 123 grains, or from one to two teaspoonfuls, a quantity amply sufficient to cause death.

"After thus treating the special case submitted to them, it is not surprising that the conclusions of the Commission on the general question are vague and unsatisfactory. Part of them are commonplace remarks in which everybody agrees; but in what danger really consists, and how it is to be avoided, is nowhere pointed out. They state: 'there is risk of asphyxia when the anæsthetic vapour is not sufficiently mixed with air.' The risk is not one of asphyxia, but of over-narcotism, which, according to circumstances, may cause death by paralyzing the respiratory movements, and so bear a certain resemblance to asphyxia, or may arrest the action of the heart, and so resemble syncope. They lay down, as a rule: 'To take care, during inhalation, that a sufficient quantity of air be mixed with the chloroform, and that respiration be entirely free;' but they do not state what is a sufficient quantity of air: whether 75 parts air to 25 vapour is sufficient, or whether it should be 95 parts air to 5 of vapour, we are left entirely in the dark. The truth is, it ought to be somewhere about the latter quantity, and the vapour cannot ever be breathed with safety in larger proportion than 10 parts by measure to 90 of air. The conclusion of the Commission means no more than that there should be sufficient air for the purposes of respiration, and this is a fatal mistake—I say fatal, for there has been a death from chloroform in France, since the adoption of the report by the Academy. It occurred in a public hospital, and would, in all probability, have been prevented by a different line of conclusions on the part of that learned body. The chloroform in this case was applied on lint, which was placed loosely over the mouth and nostrils. There was no impediment to free respiration, but the man suddenly expired, as in the previously recorded cases; and so long as so powerful an agent as this is given with no better means of regulating its strength than a handkerchief or sponge, such melancholy cases cannot fail, now and then, to happen. Many patients, who have not suffered, have narrowly escaped; several cases of syncope from chloroform were mentioned in the late discussion, and they have frequently occurred in this country under the use of the handkerchief, although it is no part of the action of chloroform, when carefully given, to cause syncope. The pulse may become small on account of struggling or altered breathing; and when sickness follows the inhalation, there is often a degree of depression attending it, but never sudden fainting, which, if caused by the vapour, must depend on a near approach to paralysis of the heart.

---

* Medical Gazette, October 13, 1848.

"The last recommendation of the Academy is judicious enough, 'to suspend the inhalation as soon as insensibility is procured,' &c.; but unless there be some means of regulating the strength of the vapour, there may be a dangerous increase of the narcotism after the inhalation is suspended, owing to absorption of a large quantity of vapour that may be present in the lungs at the moment, and which will take about twenty seconds to get absorbed and reach the brain; thus accumulating the effect during that period.

"M. Roux remarked that, if he supposed it necessary to take all the precautions recommended by some surgeons, he would for ever renounce the use of chloroform. I would reply, that those who are not willing to take very great precautions in using this powerful medicine, should employ ether, in the use of which, danger can be avoided by only moderate precaution, as it cannot act so swiftly as not to give due warning."

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

71. *Poisoning by Sulphate of Zinc.* By Professor Platner and Pignacca.—Owing to the emetic properties of this substance, there are few cases on record in which it has produced poisoning, and perhaps none in which it has proved fatal. A brief account of four cases, which have occurred at Pavia, will therefore possess great medico-legal and physiological interest.

The *first* case occurred (November 1847) in the person of a strong woman, æt. 25, who, believing she was taking a dose of Epsom salts, drank off a solution of an ounce and a half of sulphate of zinc. She instantly vomited, and then became affected with almost incessant retching and purging for half an hour, which continued afterwards at short intervals for three hours, and then gradually diminished. The pulse was frequent and small, and extreme prostration existed, accompanied with distressing restlessness and anxiety; the temperature of the skin was diminished; great pain in the abdomen, limbs, &c., existed, as well as a sense of burning in the throat and stomach. As the prostration increased, the pain ceased, and she died 13½ hours after taking the poison, retaining her intellectual faculties to the last. On examination, 40 hours after death, the following were the chief appearances observed: great lividity of the external surface; congestion of the brain and its membranes; a congested state of the lungs; heart flaccid, the right cavities being filled with black, thick blood; inner surface of the stomach covered with a yellowish, pultaceous matter, on the removal of which a uniform yellow, ochrous colour was observed, except towards the great curvature, where it became reddish: a gelatiniform ramollissement of the mucous membrane prevailed, exposing, in some parts, the submucous cellular tissue. The small intestines were somewhat injected, and contained yellowish matters.

The *second* case occurred in the person of a sister of the above, of robust frame, and 35 years of age, who, under the same error, took a similar dose at the same time. With her, vomiting was delayed for 15 minutes; but when it did occur, she found the rejected matters tasted similarly to the fluid she had swallowed, which was not the case with her sister. She had no purging for 10 hours; the other symptoms much resembled those of her sister, the burning sensation in the throat being, however, absent; but at the end of that period she began to rally, her pulse resuming some of its lost power. Next day febrile reaction occurred, which was followed by profuse sweating that soon became excessive. The fever, with pain at the epigastrium, continued until the sixth day; and debility long remained extreme. Neither pain, nor any symptom whatever, was referable to the head. Menstruation came on at its proper period. The treatment in both cases consisted in the encouragement of vomiting by abundant quantities of sugared tepid water, and the administration of magnesia with milk.

The *third* case was observed in a female, æt. 31, who was recovering after delivery. She took a quarter of an ounce of the sulphate in mistake, and soon suffered from a sense of burning and constriction of the fauces, and excessive pain at the epigastrium. Efforts at vomiting were rendered availing by abundant drinks of warm water, and a solution of magnesia was given. After a while she rallied from a state of prostration, and six hours after, profuse sweating set in, but she was free from suffering. For several days, however, she suffered from headache, delirium, and tremors, which her attendant attributed to acute gastro-enteritis, and treated as such.

A law student, of robust habit of body, æt. 20, furnished the subject of the *fourth* case. When seen, he was said to have been ill for four days, no further account being attainable from the neighbours, and he himself being moribund, apparently in an apoplectic condition. Upon examination, the brain and membranes were found much congested, and the pleura contained abundance of sanguinolent fluid. The stomach was very vascular, spots of ecchymosis being observable, and near the pylorus slight ulceration. Two drachms of sulphate of zinc were detected in the liver and blood, the fluids of the alimentary canal furnishing but little.—*Brit. and For. Med.-Chirurg. Rev.*, April 1849, from *Gazetta Medica di Lombardia*, 1848.

---

72. *Accidental Poisoning by Tincture of Muriate of Iron.*—Sir JAMES MURRAY communicated to the Surgical Society of Ireland (Feb. 3) the following interesting case of poisoning by tincture of muriate of iron:—Sir Wm. P., æt. 72, had sent a written order for a rhubarb mixture. The person officiating as *locum tenens* for another at the —— dispensary, sent a bottle, containing about three ounces (by weight), of the tincture of muriate of iron, which Sir William unfortunately drank off *undiluted*, and without examination, the room being dark and the bed-curtains undrawn. The alarm being instantly given, the person with whom the mistake originated was summoned, and brought a scruple of sulphate of zinc (white vitriol) which he administered. As might have been expected under such circumstances, this did not act as an emetic; on the contrary, it remained on the stomach, and aggravated the danger. As no drinks were given to dilute the draught, the concentrated *muriate* continued to act upon the mucous surface of the mouth, throat, and stomach, until my arrival, nearly two hours. Upon reaching the apartment, I found the patient tossing about in the utmost consternation and agony; his tongue was swelled and protruded from the mouth; its skin was parched and peeling off it, while ropy mucus flowed from the mouth and nose; the eyes seemed starting from their sockets; the respiration was noisy and laborious; and suffocation seemed to be

impending, while the sufferer tossed from side to side, gasping in the deepest anguish for breath. During this time, his hand was riveted to the region of the stomach as the principal seat of pain; the palate and interior of the mouth were burned, and presented a parboiled appearance.

Under these circumstances, the first indication of treatment was to neutralize the *muriatic acid*, and to precipitate the iron. Upon instant search, I found a dozen soda powders belonging to a lady then on a visit. Rejecting the blue or tartaric acid papers, I dissolved the twelve alkaline or soda powders in a jug of tepid water. This I passed down the throat from a large spoon, as fast as possible, until abundant effervescence commenced in the stomach, like a fermenting vat, and carried up its foaming contents, mixed with carbonate of iron, slimy mucus, and skinny membranes. The alkaline solution was given as long as any acid continued to be discharged. The copious effervescence served the purpose of bringing up the contents of the stomach with the drinks and diluents, which were abundantly supplied at intervals. When the acid tincture was thus decomposed, and the vomiting ceased, an emulsion, composed of olive oil and white of egg, blended with sugar and water, was then administered, and three pints of similar emulsion also thrown up by *enema*. Soon after, he swallowed a *castor-oil mixture*, also blended with white of egg. During the first two hours, the pulse remained very feeble, the skin being cold and clammy, the face swollen and livid; but now, the pulse beat more quickly and strongly, reaction was setting in, the breathing, particularly the inspirations, became oppressive, and the sense of burning and constriction in the throat extremely severe. The unhappy patient was gasping in the greatest agony, and the noise of breathing resembled that of a bad case of croup. Finding the pulse still rising, and the pain more acute in the stomach and throat, I opened a vein in the arm. The blood was remarkably *black*, and so *thick* and viscid that it would not flow until I cut a much larger orifice in another vein, when a great quantity of blood (which resembled molasses) was abstracted, relaxation ensued, slight perspiration broke out, and the bowels began to operate. The arm was then bound up, and upon examining the night-chair, nearly two quarts of *inky evacuation* had passed off, mixed with emulsions, ropy jelly, and the carbonate of iron, precipitated in the stomach by the soda.

These operations relieved the burning of the stomach, but the croupy noise and obstruction of respiration in the throat became so much aggravated, and the inflammation seemed extending to such a degree, as seemed to require an artificial opening into the trachea. At twelve o'clock I applied three dozen leeches to the front of the neck, the castor-oil again acted, and about a pint of irony, glairy slime came away, when the pulse began to subside. By keeping the neck bleeding by aid of fomentations, the swelling of the palate diminished, and the respiration became less difficult. The stomach still remaining acutely tender, forty-eight leeches were applied to the epigastrium. At one o'clock the suffocation was less threatening, and the tossing and alarm subsided so far as to permit some moments of rest; fomentations were continued to the regions of the stomach and throat, and the breathing becoming still more easy, he had short intervals of sleep. About three o'clock some sago remained upon the stomach; the anguish of the countenance now gradually disappeared; the inflammation of the mouth, tongue, and palate abated; and at four P. M., the surgeon-general and Dr. O'Grady, the medical gentlemen who had been summoned from Dublin, arrived, and had only to congratulate the worthy baronet upon his narrow escape. Mild treatment soon restored this excellent gentleman to his friends and society.—*Dublin Med. Press*, Feb. 21, 1849.

---

73. *Effects of the Use of Arsenic in Agriculture. Poisoned Game.*—Dr. Fuller, of St. George's Hospital, has recently called attention to the probably injurious effects resulting from the use of arsenic in steeping seed corn.

"For some months past," says Dr. Fuller, "in certain parts of Hampshire partridges have been found dead in the fields, presenting a very remarkable appearance. Instead of lying prostrate on their side, as is usually the case with dead birds, they have been found sitting with their heads erect and their eyes open, presenting all the semblance of life. This peculiarity, which for some time had attracted considerable attention among sportsmen in the neighbourhood, led to no practical result until about ten days ago, when a covey of ten birds having been found nestled together in this condition, two of the birds, together with the seeds taken from the crops of the remaining eight, were sent up to London for examination. I was requested to undertake the investigation, and the result of my experiments I will now briefly detail.

"I first examined the seeds taken from the crops of the birds, and detected, as I anticipated, a large quantity of arsenic. I then proceeded to ascertain whether the flesh of birds so poisoned might not itself prove poisonous when eaten, and with this view I carefully cut the flesh off the breast and legs of one of the birds, and gave it, together with the liver, to a fine healthy cat. She ate it with avidity, but in about half an hour she began to vomit, and vomited almost incessantly for nearly twelve hours, during the whole of which time she evidently suffered excessive pain. After this nothing would induce her to eat any more partridge. I kept her without food for twenty-four hours, but in vain; she resolutely refused to touch an atom more of the bird. This being the case, I gave her some beef and some milk, which she eagerly swallowed—proving, beyond doubt, that her instinct, and not her want of appetite, induced her to forego the dainty meal which had just been offered her.

"I cut the flesh off one side of the breast of the other partridge, and, after about an hour's boiling, obtained, by Reinsch's process, a thin incrustation of metallic arsenic—thus demonstrating, beyond question, what the previous experiments had left little room for doubting.

"It is notorious that many of the dealers in game are supplied through the agency of poachers and others, who have a direct pecuniary interest in supplying them with the largest possible number of birds. It is certain, moreover, that, if men of this sort were to find a covey of partridges in a field, dead, but fresh and in good condition, they would not hesitate to send them with the remainder of their booty to the poulterer, who would as certainly, without suspicion, sell them to his customers. And, after the experiments above detailed, there can be no reasonable grounds for doubting that these birds, when eaten, would produce disagreeable and injurious, not to say poisonous, effects on those who partake of them. It is obvious, therefore, that in all cases of supposed cholera, or of suspicious bellyache, occurring at this season of the year, we shall do well to make particular inquiry as to whether our patient has recently partaken of pheasants or partridges purchased at a poulterer's; and it is further manifest that, in all cases of poisoning, or suspected poisoning by arsenic, the fact of the persons having lately eaten of partridges and pheasants must form an important element in the inquiry, and must tend to cast a suspicion on the evidence adduced to prove a criminal intent in the administration of the poison. So that, in a medico-legal point of view, the question is one of the gravest import.—*Lancet.*

[The subject to which Dr. Fuller has very properly called attention has been pretty fully discussed by Mr. Taylor, in his recently published work on poisons. Mr. Taylor had found arsenic in the flesh of game which had been poisoned by steeped corn, and arrived at the same conclusions as Dr. Fuller. The subject has also been investigated in France, where a commission was appointed by the Academy of Sciences to prosecute an inquiry as to whether the flesh of sheep suffering from the effects of arsenic was poisonous. It was ascertained that the flesh of poisoned animals is noxious; but if they live sufficiently long, the whole of the arsenic is voided in the urine and feces, and the flesh may then be eaten with impunity.]—*Ph. Journ.*, Jan. 1849.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Abstract of a Paper on "The Microscopical Appearances presented in the Intestinal Discharges and Muscular Fibres of a Patient who died of Epidemic Cholera." Read, by request, at a meeting of the Boston Society for Medical Improvement, on June 11th, 1849. By WALDO (I.) BURNETT.

On Sunday, June 3d, a man at the northern part of the city was attacked with the premonitory symptoms of cholera. The case ran a rapid course, and in a few hours he was in a state of collapse; and on the next morning, at ten o'clock, he died.

A post-mortem examination of his body was made, on the afternoon of the same day, at half past three o'clock. At this autopsy I secured a quantity of the "rice water" liquid found in his intestines; also a portion of one of the pectoral muscles. These specimens I submitted, on the morning of the fifth, to careful and repeated microscopical examinations, and obtained the following results.

1st. "*Rice Water*" *Liquid.*—This was found loaded with epithelium of both varieties, viz., the *cylinder* epithelium, and the *tesselate* or pavement epithelium. These cells were floating about not only singly, but in large flakes of one-thirtieth to one-tenth of an inch in size, and attached uninjured to the "basement membrane" from which they grow; so that it would appear that this "basement membrane" had been stripped off, bearing the cells upon it. The cloudiness and opacity of this liquid seemed entirely due to the presence of immense quantities of these epithelial cells, since no mucous corpuscles, or any other corpuscles whatever, as well as no shreds of lymph, could be detected from repeated examinations.

It is well known that the *tesselated* or pavement epithelium covers the mucous membrane of the mouth and œsophagus, while the mucous membrane of the remaining portion of the alimentary canal is covered by the cylinder epithelium. Therefore the presence of both varieties of this epithelium in these discharges would show that they came from the surface of the *whole* of the alimentary canal, instead of from its intestinal portion only.

Loitering here and there, in the field of the microscope, was an occasional crystal of the *oxalate of lime.*

For a long time, I could perceive nothing in this liquid but the two substances just mentioned, viz., the epithelium and the crystal of oxalate of lime. But, after increasing the power of the instrument, a third element appeared, and was then so apparent that I greatly wondered I had not before seen it. This was the presence of thousands of thousands of *animalculæ* swarming and sporting about in every direction. For a time, I thought that this must be a mere accident, but very many subsequent examinations afforded the same results; and, that I might not be the only person to vouch for their presence here, I showed them to my friend, Dr. D. H. Storer, of this city, who made the remark, that he distinctly saw them "writhing about." By a power of five hundred linear diameters, they could clearly be seen, some as *linear* moving bodies, others having a more globular character—the former seeming to be only a linear aggregation of the latter. They seemed, therefore, to be *vibriones*, and by measurement the single animals were from $\frac{1}{16,000}$ to $\frac{1}{20,000}$, and the compound chain-like animals were from $\frac{1}{8000}$ to $\frac{1}{4000}$ of an inch in diameter. I state these facts in this precise manner, since some, it is probable, may think that all this is simply the *molecular motion* so often observed in the secretions. But that they were distinct animals having voluntary motion, I have no doubt, since Dr. Storer, as well as myself, saw them moving in a serpentine manner over the field.

2d. *Muscular Tissue.*—Not thinking of seeing any of these appearances, I examined a small bit of muscle, with reference to ascertaining, if possible, on account of the involuntary muscular contractions during life, the proximity of the *striæ* of their *fibrillæ.* But my perception of these relations was not very acute, from my astonishment to find in this tissue these same animalculæ in great numbers. A little distilled water, used to soften the tissue, brought out great numbers of them into it, so that they were seen, as in the intestinal liquid, sporting about hither and thither. In these examinations, all possible care and precaution were used, to prevent the introduction of any foreign bodies into the field of observation.

The great fact to be borne in mind, as the result of these examinations, is that the same *animalculæ* were found in great numbers both in the intestinal liquid and in the muscular fibre. And the fact of their being in the muscular fibre would argue, I think, decidedly against the supposition of their mere accidental presence in the liquid of the alimentary canal.

I much regret that, before these observations were made known, I should not have had the advantage of more specimens from patients who have since died here of this disease. And although it may seem premature that these results from a *single* case should thus be made known, yet they are exposed as simple facts, and upon future examinations I shall rely for the proof, either, on the one hand, that these *animalculæ* were simply *accidental* to *this* case alone; or, on the other hand, that their presence is constant in this disease; and if the latter is found to be correct, as would seem thus to have been foreshadowed, there will then be sufficient time to attempt to trace their *causative* relation with this dire disease now among us.

Furthermore, should future investigations show that these *vibriones* are equally common in the tissues and secretions of patients dying of other diseases; in other words, that their presence in this disease is not specific; yet the above note will not, perhaps, be considered without value—since it may serve to call the attention of better observers than myself to this interesting subject.

P. S. At the meeting at which this paper was read, two plates, showing drawings of all these appearances and the *animalculæ*, were exhibited.

Fourth Meeting of "The Association of Medical Superintendents of American Institutions for the Insane," at Utica, N. Y.

The Association of Medical Superintendents of American Institutions for the Insane, convened at Churchill's Hotel, in the City of Utica, N. Y., on the 21st day of May, 1849, at 10 o'clock, A. M.

The President, Dr. Wm. M. Awl, in the chair; and Dr. Kirkbride, Secretary.

Present—*Dr. Bates*, of the Maine Insane Hospital.

Dr. Bell, of the McLean Asylum for the Insane.

Dr. Stedman, of the Boston Lunatic Asylum.

Dr. Cutter, of the Pepperill Private Institution.
Dr. Ray, of the Butler Hospital for the Insane, R. I.
Dr. Brigham, of the New York State Lunatic Asylum.
Dr. Buttolph, of the New Jersey State Lunatic Asylum.
Dr. Kirkbride, of the Pennsylvania Hospital for the Insane.
Dr. Awl, of the Ohio Lunatic Asylum.
Dr. McNairy, of the Tennessee State Lunatic Asylum; and
Dr. Freemont, of the Beaufort Asylum near Quebec, L. C.

The minutes of the last meeting having been read, the *Secretary* reported that, in compliance with the resolution adopted last year, he had invited the Boards of Managers or Trustees of all the Institutions for the Insane on this Continent, to attend the sessions of the present meeting, and read letters from the Boards of Trustees of the Boston Lunatic Hospital, and of the Eastern Asylum of Virginia, acknowledging the receipt of the invitation, and regretting their inability to attend.

Dr. Bell, after some appropriate remarks, offered the following resolutions, which were unanimously adopted, viz.

Resolved, That, as the first official act of this Association, we would give utterance to the profound sensibilities with which we have been impressed by the recent decease of our honoured associate and friend, *Dr. James Macdonald*, of New York.

Resolved, That, in view of his elevated personal character, his high intellectual attainments, his extended experience of nearly twenty-four years devoted to our department of professional labour, we deeply appreciate the breach made in the ranks of science and usefulness by his death; and in the premature close of a life of devotion to duty, at its meridian, we recognize the hand of a mysterious and inscrutable Providence, to which, however dark, we would submit in humble faith and adoration.

Resolved, That so important an event in the history of our Association, as well as of that department of professional labour to which our lives are devoted, ought not to pass without some more enduring recognition of his life and services, and that some member be appointed to prepare and publish, and have registered on our annals, a suitable tribute to his memory in a record of his professional life and labours.

On motion of *Dr. Kirkbride*, it was resolved, that *Dr. Luther V. Bell* be requested to prepare an obituary notice of our late friend and associate, *Dr. James Macdonald*, to be entered on our minutes and to be published, and that the Secretary be instructed to furnish to the family of the deceased a copy of the preceding resolutions.

Dr. Brigham read a letter, detailing many of the circumstances attending the sickness and death of *Dr. Macdonald*.

On motion of *Dr. Bates*, it was resolved, that each member of the Association be authorized to invite such gentlemen to attend its different sessions as he may deem proper.

Dr. Brigham tendered to the members of the Association an invitation to spend to-morrow at the New York State Lunatic Asylum, which was accepted.

A communication was also received and read, from the Managers of the State Lunatic Asylum and citizens of Utica, inviting the members of the Association to visit Trenton Falls at such time as may suit their convenience, which was also accepted.

Dr. Ray moved that a committee be appointed to ascertain what business is likely to come before the Association, which was agreed to, and *Drs. Ray, Brigham*, and *Bell* were appointed the committee.

Dr. Bell read to the Association a paper containing the history of a very remarkable and interesting case of chronic insanity, which, after discussion, was laid upon the table.

Dr. Ray, from the committee on business, made a report in part, which was accepted, and the committee continued.

Dr. Bell read the account of a case of insanity, as generally published in the newspapers, in which it was stated that an individual had recovered perfectly after being insane and closely confined for forty years.—Also the result of his own investigations on the subject, which prove conclusively that it is only a case of mania, terminating in dementia, as is common with those of long continuance, but without any symptoms whatever really indicative of a recovery—the only point of interest being, if the case is correctly reported, that the acute mania should have existed for so long a period as nearly forty years.

Dr. Freemont narrated cases of more than twenty years' standing, which had come under his own notice in Canada, in which an equal degree of improvement had been manifested under somewhat similar circumstances.

Adjourned to 2½ P. M.

Afternoon Session.

The Association met agreeably to adjournment.

Dr. Buttolph read a report on the relations of phrenology to the study of insanity, which, after full discussion, was laid upon the table.

Dr. Ray read an elaborate report on the statistics of insanity, which, after full discussion, was laid upon the table.

On motion of *Dr. Ray*, adjourned to 8½ o'clock to-morrow morning.

MAY 22d, *Morning Session.*

The Association met agreeably to adjournment.

The minutes of yesterday's sessions were read and adopted.

Dr. Rockwell, of the Vermont State Asylum,
Dr. Nicholls, of the Bloomingdale Asylum, N. Y.,
Dr. Worthington, of the Friends' Asylum, Pa., and
Dr. Jarvis, of the Dorchester Private Institution, Mass.,
appeared, and took their seats as members of the Association.

Dr. Kirkbride read a report on the following resolution, offered to the Association at its last meeting, viz.:—

Resolved, That, in the estimation of this Association, it is of great importance to the temporary comfort and permanent welfare of the insane, that, in all institutions for their custody and treatment, there should be a class of persons employed who are qualified by habits, education, and social position, to become useful companions to the patients, and who, while exempted from all ordinary ward labour, shall, under the instructions of the physician, perform such duties as shall aid him specially in the mental treatment of the patients.

The report, after full discussion, was laid upon the table.

Dr. Bates read a report on the necessity of precision of language on subjects connected with insanity, which, after discussion, was laid upon the table.

Dr. Bell read a paper on a certain form of disease resembling some advanced stages of mania, of the delirium of typhoid fever, or of cerebral inflammation, but which may, perhaps, constitute a hitherto unrecognized and undescribed malady.

On motion, adjourned to meet at the New York State Lunatic Asylum at 2½ o'clock, P. M.

Afternoon Session.

The Association met at the New York State Lunatic Asylum agreeably to adjournment, and proceeded, under the guidance of *Dr. Brigham*, to examine the different wards, fixtures, and arrangements of that extensive establishment.

Having again come to order for business, the paper read by *Dr. Bell* at the previous session was called up, and after being discussed by the members generally, was laid upon the table.

Then adjourned to 8 o'clock to-morrow morning.

MAY 23d, *Morning Session.*

The Association met agreeably to adjournment.

The minutes of yesterday's session were read and adopted.

On motion of *Dr. Kirkbride*, it was resolved, that this Association will close its present sessions at 1 P. M. to-morrow.

Dr. Stedman moved that, when the Association adjourns, it will adjourn to meet in the city of Boston, on the first Tuesday of June, 1850.

Dr. McNairy moved to amend the resolution, by striking out Boston and inserting Cincinnati, when, after a full discussion, the whole subject was referred to a committee consisting of *Drs. Ray*, *Bell*, and *Kirkbride.*

Then adjourned to 5 P. M.

Afternoon Session.

The Association met agreeably to adjournment.

Dr. Bell, from the committee to select a place and propose a time for the next meeting of the Association, reported, as the unanimous sentiment of the committee, that the meeting should be held in the city of Boston on the third Tuesday of June, 1850, at 10 o'clock A. M., which recommendation was unanimously adopted.

On motion of *Dr. Kirkbride*, it was resolved, that this Association has visited and examined, with great satisfaction, the New York State Lunatic Asylum, the excellent institution under the care of *Dr. A. Brigham*, and tender to him their sincere thanks for his courtesy and attention, and for the bountiful hospitality extended to the members during their very gratifying visit.

On motion of *Dr. Ray*, it was resolved, that a committee be appointed to prepare business for the next meeting of the Association. The chair named, as the committee, *Drs. Ray*, *Bell*, and *Buttolph*.

Then adjourned to 8 o'clock to-morrow morning.

MAY 24th, *Morning Session.*

The Association met agreeably to adjournment.

The minutes of yesterday's sessions were read and adopted.

Dr. Benedict, of the Philadelphia Lunatic Hospital at Blockley, Pa., appeared and took his seat as a member of the Association.

On motion of *Dr. Kirkbride*, the following resolutions, after being very fully discussed, were unanimously adopted by the Association, viz.

Resolved, That it is the deliberate conviction of this Association, that an abundance of pure air, at a proper temperature, is an essential element in the treatment of the sick, especially in hospitals, and whether for those affected with ordinary disease or for the insane, and that no expense that is required to effect this object thoroughly can be deemed either misplaced or injudicious.

Resolved, That the experiments recently made in various institutions in this country and elsewhere, prove to the satisfaction of the members of this Association that the best means of supplying warmth in winter, at present known to them, consists in passing fresh air from the external atmosphere over pipes or plates containing steam under low pressure, or hot water, the temperature of which at the boiler does not exceed 212° F., and placed in large air chambers in the basement or cellar of the building to be heated.

Resolved, That a complete system of forced ventilation, connected with such a mode of heating, is indispensable in every institution devoted to these purposes, and where all possible benefits are sought to be derived from its arrangements.

Dr. Bell, on behalf of the committee on business for the next meeting, read the following report, which was adopted, viz.

The committee, appointed for the purpose of reporting some suitable method of preparing business for future meetings, report as follows:—In order that nothing connected with the subject of insanity, worth being known, shall escape the notice of the Association, the committee recommend the appointment of standing committees, whose duty it shall be to keep themselves informed of whatever occurs connected with the respective subjects consigned to their special charge, and report to the Association at its meetings everything that may be deemed worthy of its attention.

They would recommend the appointment of committees on the following subjects:—

1. On the Moral Management of the Insane.
2. On the Medical Management of the Insane.
3. On the Medical Jurisprudence of Insanity.
4. On the Construction of Hospitals for the Insane.
5. On Restraining Apparatus.

The committee would not be understood to mean that the transactions of the Association should be confined to the reports of these committees. On the contrary, they believe that the purposes of this Association would be greatly advanced by special committees as well as by the voluntary contributions of the members; and believing that there is no more efficient mode of securing a report from each member, than that each one should be charged specifically with a topic for his investigations, we would recommend that the President should, at a period prior to the first of July next, select a subject to be reported on for each gentleman superintending the hospitals of the United States and Canada, who is or may be competent to become a member of the Association, and notify him by mail of such appointment, at the same time soliciting a definite reply, whether the Association may expect a compliance with such duty.

Dr. Stedman offered the following resolutions, which were adopted, viz.

Resolved, That the thanks of this Association are due, and are hereby tendered, to the Managers of the New York State Lunatic Asylum, and to the citizens of Utica, for the marked attention, courtesy, and generous hospitality bestowed by them on the members of this body, during its present session.

Resolved, That the thanks of this Association are also due to Mr. Churchill, for his liberal provision for the meetings of the Association, and for which he has declined receiving compensation, on account of its benevolent character.

On motion of *Dr. Buttolph,* it was resolved, that the members of this Association do highly appreciate the benevolent and disinterested services of Miss D. L. Dix, in behalf of the Insane in various States of the Union, in calling attention to their wants, and in contributing her influence in favour of the erection of appropriate institutions for their treatment.

Resolved, That the Secretary furnish Miss Dix with a copy of the preceding resolution.

The *Treasurer* reported that the Association had incurred no expenses since its last meeting, and the amount in his hands remained as stated in his last report.

On motion of *Dr. Kirkbride*, the committee to prepare business for the next meeting, was requested to nominate the standing committees contemplated in their report.

Dr. Cutter read a paper on the history of the treatment of the insane since 1814, with special reference to his own observations in that disease. After discussion, the paper was laid upon the table.

Dr. White read a paper on the propriety and importance of having distinct institutions for patients of different sexes, which, after discussion, was laid upon the table.

Dr. Bell, on behalf of the committee on business, reported that they recommended the following members to constitute the standing committees of this Association, viz.

On the Moral Management of the Insane, *Dr. Awl*,
" Medical Management of the Insane, *Dr. Bates*,
" Medical Jurisprudence of Insanity, *Dr. Ray*,
" Construction of Hospitals for the Insane, *Dr. Kirkbride*,
" Restraining Apparatus, *Dr. Nicholls*,

which nominations were approved and confirmed by the Association.

On motion of *Dr. Stedman*, it was resolved, that the Secretary be instructed to furnish a copy of the proceedings of this Association to the editor of the American Journal of Insanity, and to the editors of the various Medical Journals in the United States, for publication in their respective periodicals.

The minutes of the meeting having been read and approved, the Association adjourned to meet in the city of Boston, on the third Tuesday of June, 1850, at 10 o'clock A. M.

THOMAS S. KIRKBRIDE, *Secretary.*

Condyloid Process of the Occiput.—Dr. NEILL has observed a configuration of the condyloid process of the occiput, which is not generally noticed in the systematic works on anatomy.

He has shown us a cranium in which this process is double, being completely divided by a ridge into two distinct articular surfaces. This peculiarity is found in the pure *African* head oftener than in any other, but instances occur in other races.

This process will be found to be divided in all *young* heads, and it seems that the African occiput has a tendency to retain this formation in the adult state. In this respect there is an analogy to the occiput of the lower classes of the vertebrata, where it will always be found in this divided condition.

The principle of classification proposed by Professor Agassiz, which is based on the embryological condition of animals, and which has been so satisfactorily illustrated by him with reference to the lower orders of animals, is here shadowed forth in the human species.

Dr. Neill promises us an article for the next number of this Journal relative to this fact in special anatomy, with numerical comparisons of crania of different nations in this particular.

Cholera. By N. WARD, M. D., Burlington, Vt.—This disease appeared several times in the northern province of Ceylon during the time I was resident there. About three years ago it prevailed extensively, and was of a severe character. In the treatment of it, some relied on calomel and opium in large doses. I derived the greatest benefit from a combination of calomel, opium, camphor, and sugar of lead. I tried acetate of morphia and prepared chalk, with peppermint. This relieved the pain, but did not stop the progress of the disease, except in mild cases. In some cases I gave sugar of lead and opium, and sometimes camphor, omitting the calomel. This treatment frequently arrested the discharges, but less surely than with calomel; and the disease was very apt to return in a short time. The treatment where calomel was used was altogether the most satisfactory. It did not seem to me important or desirable to produce salivation. For an adult, in a case of severity, I generally gave at one dose, calomel gr. x, p. opii gr. ij, camphor gr. v, acet. plumbi gr. ij, ground well together. This mixture was given in all stages of the complaint, from the incipient diarrhœa to the state of collapse, varying the dose according to the severity of the case. One dose was generally sufficient; if not, it was repeated. No food or drink was allowed till the patient was convalescent, and then with caution. Drinks did not relieve the thirst complained of by the patients, but seemed to keep up the discharges. There were instances in which the disease, after it had been apparently arrested, was brought back by the use of a cup of gruel. Care was taken not to give anything that would decompose the acetate of lead. If the calomel did not act on the bowels in due time after the evacuations were stopped, and especially if pain in the abdomen came on, it was the practice to give a mild cathartic with some carminative.

This plan of treatment I adopted ten years ago, and have had every reason to be satisfied with it. It secured the confidence of the community to a greater extent than any other. People were desirous of procuring doses of the medicine to a greater extent than we were able to supply them, to keep by them for use in the event of an attack. I heard of many persons whose lives were saved by this precaution. The cholera appeared to me to be as much under the control of medical treatment as any active disease we have to deal with.

The danger in this disease appears to be owing mostly to the rapid depletion that takes place in it. From some cause, to us hitherto unknown, the body is rapidly deprived of a large part of its fluids, poured out through the lining membrane of the alimentary canal and the skin; and though the character of the discharges is not well understood, nor that of the disordered condition by which they are produced, I have allowed myself to conjecture that the cholera may be more nearly allied to some forms of hemorrhage than to the ordinary bowel complaints. However this may be, have not the modes of treatment that have been reported as successful, been such as are adopted to produce action or change of action in the capillary system, and thus prevent the further reduction of the circulating mass?

Nurses' Sore Mouth. By J. YALE WARE, Mass.—This is a very troublesome complaint of mothers, and one that is rapidly increasing in this section. An infallible remedy, when it does not purge the bowels, is Griffitt's Myrrh Mixture, in tablespoonful doses three times a day, internally, and a solution of nitrate of silver gr. viii to ℥iv of pure water for a gargle; and, if the soreness extends toward the stomach, swallow a teaspoonful three times a day. Of course, if need be, the stomach should be cleansed by a light emetic or gentle laxative, antecedent to the above treatment. I believe, if perseveringly used in season, very few mothers need wean their children from this cause; indeed, I have never known it fail to relieve the mouth.

Aphtha. By J. YALE WARE, Mass.—The following simple prescription has proved a specific in my hands in many hundred cases of aphtha. I learnt it of Dr. Eli Ives, New Haven. ℞.—Ipecac. gr. vi; tinct. opii; ess.

pep., āā gtt. iv; boiling water xxiv teaspoonfuls. Sweeten with loaf sugar. Dose, a teaspoonful every two hours. At the same time apply to the tongue equal parts of a powder of borax and loaf sugar, which the child will carry over the mouth. I have never known the above to fail in any case of infants' sore mouth. It generally cures in two days. Occasionally, in delicate subjects, the disease returns again, when the remedy needs repeating.

DOMESTIC SUMMARY.

Photophobia, resulting from exalted sensibility of the sensitive branch of the fifth pair going to the eye from irritation of the sensitive branch of the same nerve going to the teeth.—Dr. Hays remarked, that he had seen, within a few years, some curious cases of exalted sensibility of the retina, from a cause which he believes has not been suspected of such an effect, viz., irritation of the dental branch of the fifth pair of nerves. These cases much interested him, and if the College had nothing better to occupy their attention, he would present a verbal sketch of a few of them; he had not prepared any written history of the cases, having no previous intention of submitting them at this meeting.

The first case occurred in a gentleman, the Cashier of a Bank in North Carolina. At the great fire in Wilmington, he had suffered considerable fatigue and exposure in endeavouring to save the books and papers of the Bank, and had, subsequently, severely tried his eyes in arranging the documents which were rescued from the flames. He soon experienced great intolerance of light, and some inflammation of the conjunctiva. For this he was treated by the physicians in his vicinity, but with only temporary relief, except for the inflammation. He subsequently visited Virginia and Raleigh, North Carolina, for medical advice; but from none of the remedies or plans of treatment employed in his case, did he experience the slightest permanent benefit; on the contrary, the photophobia increased to such a degree as to render exposure to the least light perfect torture. Dr. Hays was written to. Believing the case to be one for which it was not possible to prescribe judiciously until he was enabled to make a thorough examination of it, he requested that the gentleman should be brought on to Philadelphia; but his friends, in reply, stated that this would scarcely be possible, in consequence of the excessive photophobia under which the patient laboured, rendering the slightest degree of light intolerable. Dr. Hays suggested that the eyes should be entirely defended from the access of light by covering them with a mask of wadded silk. This suggestion was adopted. When the gentleman reached the city, Dr. H. found him labouring under the most aggravated degree of photophobia. In a room so perfectly dark that the Doctor was unable to see any object whatever, to the patient, the light reflected from his own hands was intolerable, and that from his shirt bosom caused so much suffering that he was obliged to keep the latter constantly covered. The coloured nurse, whom he had brought on to attend upon him, happening to enter the darkened room, the light from a white apron she wore produced the utmost suffering to the patient. So exalted was the sensibility of the retina, that, in the darkened room, where Dr. H. could not see his hand held up before him, the patient was able to distinguish the objects around him, even the figures in the carpet. He was, at length, persuaded to submit to an examination of his eyes, which he bore with great fortitude. Dr. Hays found scarcely a trace of inflammation of the eyes or of any other apparent disease. The stomach of the patient was somewhat deranged. This being remedied without relief to the photophobia, the Doctor was induced to seek for some other source of irritation, and, after careful examination of the patient, he was induced to suspect that the teeth, several of which were defective, but not painful, might be the source of the evil. At his suggestion, a couple were extracted by a dentist, but without causing any diminution of the intolerance of light. After some eight or ten days, Dr. H. examined the patient's mouth himself, and upon striking one of the lateral upper incisors nearest to the eye most affected, with a key, the patient winced as from pain, and stated that he had often experienced a disagreeable sensation to proceed from that tooth. The tooth was extracted; with the loss of the tooth, a most disagreeable gnawing or pinching sensation at the back of the eye, which had previously tormented the patient, ceased. At the root of the tooth there was found a large abscess, while the periosteum of the alveole was thickened. From this time the morbid sensibility of the eyes rapidly diminished, and the patient was soon after sufficiently recovered to return home and resume his duties as Cashier of the Bank. When Dr. Hays last heard from him, which was the past summer, after an interval of nearly six years, he was perfectly well, having had no return of the photophobia.

The next case was one which Dr. H. saw last fall, in consultation with his friend Dr. Ashmead, in a Spanish gentleman, who had suffered two years previously from a slight attack of iritis. On recovering from this, he experienced, whenever he attempted to read, a peculiar uneasiness in his eyes. For this, he consulted Dr. Ashmead, who advised a voyage to New Orleans; finding no diminution in the affection of the eye, he proceeded from New Orleans to Cuba. The uneasiness still continuing unrelieved, he returned last fall to Philadelphia. Dr. H. now saw him with Dr. Ashmead. Upon examining the eyes, they were found to be without any trace of inflammation or other apparent disease. Still, whenever the patient attempted to read, the same uneasiness, which had now continued for some eighteen months, was experienced. Judging from the circumstances of the case first detailed, Dr. H. was led to suspect that the source of the affection of the eye in the present case might be the same; he accordingly examined the patient's teeth, from which, according to his account, he had experienced no suffering. Finding some of the teeth diseased, the Doctor directed them to be extracted. One only was taken out, when the patient's courage failed him, and no relief was afforded to the affection of the eye. Subsequently, another tooth was extracted, at the root of which an abscess was found to exist. The patient now declared himself entirely relieved from the uneasy sensation he had so long experienced in his eyes on attempting to read. He has since continued perfectly well; now eighteen months.

Another case occurred in a lady, marked by the same intolerance of light as in the case first described; in which Dr. Hays had every reason to believe that the morbid sensibility of the retina was produced by irritation of the dental branch of the fifth pair of nerves. On examining the patient's teeth, several were found diseased. Five were extracted; at the roots of three of them there existed an abscess. The gums continued sore for some time; but the photophobia was considerably relieved. The patient passed from under the care of Dr. Hays into that of another physician. He heard subsequently that she had entirely recovered; and as no other treatment had been resorted to in her case, excepting covering the eye with a single slip of linen moistened with water, and a shower bath, he believes that he is not in error in referring the cure in this case to the extraction of the diseased teeth.

The last case he shall refer to was that of a young lady from the West. She had been subject to frequent severe attacks of inflammation of the eyes. In July last she suffered from one of these attacks, which was followed by excessive intolerance of light, that no remedy employed seemed in the least to relieve. She was taken to Washington City, where she was pronounced to be incurable by several physicians to whom her case was made known. She was then brought on to Philadelphia, and placed under the care of Dr. H. At his first visit, so great was the intolerance of light, that no satisfactory examination of the eyes could be made. From the imperfect view Dr. H. obtained of them, he ascertained that they were somewhat inflamed, and that a slight opacity of the cornea existed. Several of the young lady's teeth were decayed. Dr. H. directed two to be extracted, but without much relief to the morbid sensibility of the eyes. In a week or ten days, two more of the teeth were extracted from the upper jaw. After a few days the intolerance of light was greatly diminished. The lids were painted with tincture of iodine, and treatment directed, calculated for the relief of the vascularity and opacity of the cornea, and in three months, she so far recovered as to be able to read in a diamond print Bible, and bear an ordinary degree of light, when she left for home. Since then the Doctor has not heard from her.

If he is not mistaken in his view of these cases, and he could relate several others of the same character, Dr. Hays believes they very conclusively show that intolerance of light, and other uneasy sensations of the eye, may originate in an irritation of the dental branch of the fifth pair of nerves, resulting from diseased teeth—and the cure of which can only be effected by the removal of the latter. The first two cases appear to prove this incontestably; the symptoms, after resisting all the other means of cure adopted, promptly disappeared upon the extraction of one or more decayed teeth, thus showing the due relation between the effect and its cause. In the last described case, though the intolerance of light was, no doubt, owing to the inflammation of the eye itself, still he conceives that it was in part, at least, kept up by irritation of the dental branch of the fifth pair, from decayed teeth.—*Transactions of the Philadelphia College of Physicians.*

Deaths from the Inhalation of Sulphuric Ether.—Dr. Paul F. Eve, of Augusta, relates, in the *Southern Med. and Surg. Journ.* (June 1849), the two following cases in which death resulted from the inhalation of sulphuric ether.

"Case I. Mr. J., a member of the class in our college the past winter, and a candidate for the degree in medicine, inhaled sulphuric ether during the evening of the 3d of last March. The article was obtained from a druggist of good reputation, in quantity two ounces, and the motive for using it, was its exhilarating effects, which he had experienced before. It was inhaled from a pocket-handkerchief, renewing or applying it three times, and about one ounce was supposed to have been consumed. The time of inhaling it was reported to be considerable, and a companion of Mr. J. removed the handkerchief suddenly while he was still breathing it. He became then furiously excited, and it required several persons to control him. He was forced upon a bed, where he soon fell asleep. A few moments afterwards, another student of medicine, not liking his breathing, which he reported to be sonorous, awakened him, when he again became much excited: indeed, so much so that cold water was dashed over him. He now retired to bed, and nothing special was noticed until the next morning. He awoke perfectly rational, but complained of great pain in the forehead. This continuing unabated, I was sent for to see him at 2 P. M., on the 4th. Magnesia and salts in purgative doses, cold applications to the head, mustard-plaster to the neck, and warm pediluvia were prescribed; with the expression of the hope that these means would give entire relief. I was again sent for at 8 P. M., and also at 8 A. M., of the 5th, (the next day,) but did not see the patient until 11 o'clock, three hours after; he had been visited, and prescribed for in the meantime by Drs. Carter and Dugas—Dr. Ford was subsequently added to the consultation. Symptoms of meningitis, &c., persisted in spite of all treatment pursued, and our patient died on the morning of the 7th.

"Case II. For this I am indebted to a friend:—During a recent visit to Huntsville, Alabama, among the several excellent professional brethren I met with there, was Dr. John Y. Bassett, who, among other advantages, had visited Europe. At my request, he kindly furnished the particulars of a case of *tetanus* to which he was called on the 15th of August, 1847. In the progress of it, Dr. Fearn, whose reputation is well known throughout our country, and who has twice been elected to a professorship in our Medical Colleges, was called into consultation. He proposed the actual cautery and the inhalation of sulphuric ether. Dr. B. says, at this time the patient's 'pulse was good, and there were no signs of immediate extinction of life. I heated my cautery, and sent for a dentist who was in the habit of administering the ether. I gave a watch to the owner of the negro affected with lock-jaw, and requested him to speak at every quarter of a minute. In one minute, the patient was under its influence; in a quarter more he was *dead*—beyond all my efforts to produce artificial respiration, or restore life.' All present thought he died from inhaling the ether."

Lupulin as an Anaphrodisiac.—Dr. Page called the attention of the Philadelphia College of Physicians to the lupulin as a means of controlling the painful erections occurring in venereal cases. He has employed it now for two years, and has found it a better and more effectual remedy than any other he has tried. He gives it in the dose of from five to ten grains, and has never known an instance in which the second dose did not succeed in subduing the painful erections, so troublesome in cases of gonorrhœa. It does not cause the headache, constipation, and other unpleasant effects consequent upon the use of camphor and opium. He has found the remedy useful also in cases of involuntary seminal emissions. It will not cure the disease, but prevents the discharges, so long as the patient remains under its influence.

Dr. Ed. Hartshorne has employed it successfully in one case to destroy venereal appetite in a man addicted to onanism.

New Method of expelling Foreign Bodies from the Larynx.—Dr. Charles Hansford, of Knoxville, Ill., in a letter to the editors of the *N. W. Med. and Surg. Journ.*, (May 1849,) relates the case of a coloured girl who had accidentally got a pin into the windpipe, and was suffering with all the distressing symptoms consequent upon obstruction of the air passages from a foreign body. She was directed to lie upon a bench, face downwards, with the head projecting over the edge, and to take a full inspiration. Whilst in this position, with the lungs filled with air, a smart blow or two on the back with a pillow, made hard and firm by compression, had the effect to expel the pin at once from the larynx. In this case, the first blow moved the pin about an inch, the second forced it into the mouth.

"Since that time," Dr. H. writes, "I have had several opportunities of trying the maul made of a pillow. I have driven out water-melon seeds in this manner, on three different occasions; a grain of corn at one time, and a large glass bead at another."

American Medical Association.—The annual meeting this year was held in Boston, and was very numerously attended—four hundred and fifty-two delegates being present, representing twenty-two different States. The Massachusetts Legislature granted the chamber of the House of Representatives for the accommodation of the Association, and the arrangements on behalf of the profession of Boston, for the entertainment of the association, were of the most liberal and hospitable character. The following are the officers and standing committees for the year:—

President, Dr. John C. Warren, *Mass.*

Vice-Presidents, Drs. John P. Harrison, *O.*, Hugh H. Maguire, *Va.*, Austin Flint, *N. Y.*, R. S. Stewart, *Md.*

Secretaries, Drs. Alfred Stillé, *Pa.*, Henry J. Bowditch, *Mass.*

Treasurer, Dr. Isaac Hays, *Pa.*

Committee of Arrangements.—Dr. Drake, *Chairman;* Drs. Dodge, Judkins, Rives, Lawson, Richards, Strader, Cincinnati.

Committee on Medical Sciences.—Dr. Usher Parsons, Providence, R. I., *Chairman;* Drs. J. Bigelow, Boston, J. B. S. Jackson, Boston, A. B. Malcolm, Iowa, Jas. Moultrie, Charleston, S. C., G. Emerson, Philadelphia, D. King, Newport, R. I.

Committee on Practical Medicine.—Dr. J. K. Mitchell, Philadelphia, *Chairman;* Drs. R. La Roche, Philada., F. West, Philada., J. A. Swett, N. York, James Jones, N. Orleans, R. D. Arnold, Savannah, Smith, Ind.

Committee on Surgery.—Dr. R. D. Mussey, Cincinnati, *Chairman;* Drs. W. M. Awl, Columbus, O., A. B. Shipman, Syracuse, N. Y., George Fox, Philada., L. A. Dugas, Augusta, Ga., S. Parkman, Boston, J. R. Wood, N. York.

Committee on Obstetrics.—Dr. T. G. Prioleau, Charleston, S. C., *Chairman;* Drs. L. D. Ford, Augusta, Ga., Robert Lebby, Charleston, S. C., Josiah Bartlett, Stratham, N. H., H. F. Askew, Wilmington, Del., John Evans, Chicago, Ill., Isaac Lincoln, Brunswick, Me.

Committee on Medical Education.—Dr. J. Roby, Baltimore, Md., *Chairman;*

Drs. Blatchford, Troy, N. Y., G. C. M. Roberts, Balt., R. W. Silvester, Norfolk, Va., F. A. Ramsey, Knoxville, Tenn., Dr. George Sumner, Hartford, Conn., W. H. Rockwell, Brattleboro', Vt.

Committee on Medical Literature.—Dr. Alfred Stillé, Philada., *Chairman;* Drs. F. G. Smith, Philada., T. H. Yardley, Philada., P. C. Gaillard, Charleston, S. C., A. T. Morris, Montgomery, Ala., J. Fithian, Woodbury, N. J., J. B. Johnson, St. Louis, Mo.

Committee on Publication.—Dr. I. Hays, Philada., *Chairman;* Drs. A. Stillé, Philada., H. J. Bowditch, Boston, D. F. Condie, Philada., B. F. Barker, Norwich, Ct., Isaac Wood, N. York, N. J. Pittman, N. C.

The next meeting of the Association is to be held in Cincinnati, on the first Tuesday in May.

Cholera.—This disease is now prevailing at various places in different parts of the United States, from Massachusetts to Texas, and as far west as the Rocky Mountains. We shall endeavour to present at the proper period some account of this visitation; at the present time it would be impossible to do more than offer a few scattered facts, and imperfect statistics. In the Medical News for the present month will be found the latest intelligence relative to the disease, with the statistics as far as they could be collected.

New York.—The first cases occurred in this city about the middle of May. The number of deaths reported up to the 30th of June was 503.

Philadelphia.—The first cases of the disease were reported on 30th of May; and the number of deaths up to the 30th of June was 94.

New Orleans.—The number of deaths reported from cholera between the 24th Feb. and the 21st of April was 1007.

Catalogue of Medical Graduates in the University of Pennsylvania at the Commencement held April 7th, 1849.

At a Public Commencement, held April 7th, 1849, in the Musical Fund Hall, Locust Street, the Degree of Doctor of Medicine was conferred by the Rev. John Ludlow, D. D., Provost, upon the following gentlemen; after which an Address was delivered by George B. Wood, M. D., Professor of Materia Medica and of Pharmacy,

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Allen, William D.	St. Francis, Ark.	Quinine in Southern Fevers.
Anderson, William W.	Sumter, S. C.	Pneumonia.
Andrews, William H.	Mecklenburg, Va.	Dysmenorrhœa.
Archer, Edgar	Chesterfield, Va.	Blood in disease.
Bagby, George W.	Campbell, Va.	Hysteroptosis.
Bailey, Giles P.	Rockingham, N. C.	Amenorrhœa.
Barlow, Frank J.	Washington, Pa.	Prolapsus Uteri.
Barnett, Isaac N.	Lafayette, Mo.	Phthisis Pulmonalis.
Barton, Percival	Hallowell, Maine.	Spermatorrhœa.
Basye, Joseph	Northumberland, Va.	Scarlatina Anginosa.
Bell, Thomas W. A.	Houston, Ga.	Fract. Patella.
Berkeley, Lewis D.	Hanover, Va.	The Eye and its functions.
Bertolette, David K.	Washingtonville, Ohio.	Dyspepsia.
Bisland, Douglas S.	Adams, Miss.	Acute Peritonitis.
Bizzell, Henry A.	Sampson, N. C.	Oleum Terebinthinæ.
Blacknall, George W.	Granville, N. C.	Variola.
Bowman, Charles	Edwards, Ill.	Inflammation.
Brandon, John M.	Caswell, N. C.	Scrofula.
Budd, Charles H	Burlington, N. J.	The Law of Life.
Caldcleugh, James S.	Davidson, N. C.	Pathology of Aneurism.
Campbell, Anthony W.	Marshall, Miss.	Mental Alienation.
Campbell, Robert C.	Bedford, Va.	Structure of Spinal Marrow.
Carleton, J. M. H.	Monroe, Ga.	Classification of Skin diseases.
Carpenter, Charles F.	Chester, Pa.	Digestive and Nutritive Absorption.
Carpenter, Seymour D.	Fairfield, Ohio.	Arsenious Acid.
Carpenter, William B.	Madison, Va.	Enteric or Typhoid Fever.
Carter, Jesse	Davie, N. C.	Acute Gastritis.
Chandler, B. L.	Fauquier, Va.	Febris Intermittens.
Clark, Kenneth M.	Bertie, N. C.	Acute Peritoneal Enteritis.
Clarkson, Robert W.	Kanawha, Va.	Puerperal Fever.
Clayton, Henry H.	Ruth, Tenn.	Pleurisy.
Clemens, J. Brackenridge	Ohio, Va.	Nature of Tubercle.
Cochran, Benjamin S.	Hantz, Nova Scotia.	Apoplexy.
Cole, William W.	Perry, Ala.	Uterine Hemorrhage.
Coleman, Hawes N.	Nelson, Va.	Bright's disease of the Kidneys.
Coleman, John C.	Halifax, Va.	Oxygen.
Coon, Henry P.	Columbia, N. Y.	Food.
Cooper, William H.	Amite, Miss.	Physical Diagnosis of Thoracic diseases.
Courtney, William D.	Alleghany, Pa.	Typhoid Fever.
Crane, Jonas	Page, Va.	Puerperal Convulsions.
Cummins, James	Ohio, Va.	Digestion.
Davidson, Joseph M.	Mecklenburg, N. C.	Chorea.
Des Chapelles, Aristides Bretton	Macuriges, Cuba.	Yellow Fever.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Detwiller, William F.	Northampton, Pa.	Les Plaies par arrachement.
Dickeson, William T. W.	Philadelphia, Pa.	Human Hair.
Dickinson, Charles R.	Louisa, Va.	Typhoid or Enteric Fever.
Dobbins, James Harris	Centre, Pa.	Hemorrhage.
Dunn, James B.	Wake, N. C.	Cholera Infantum.
Dye, William R.	Kershaw, S. C.	Treatment of Remittent Fever.
Emlen, James V.	New Castle, Del.	Puerperal Peritonitis.
England, Robert D.	Perry, Ala.	Hepatitis Acuta.
Engles, S. Allen	Philadelphia, Pa.	Osseous Tuberculosis.
Epperson, Robert J.	Red River, Texas.	Spinal Irritation.
Farish, Henry G.	Yarmouth, Nova Scotia.	Pneumonia.
Field, Andrew M.	Sussex, Va.	Abortion.
Foss, Christian J.	St. Croix, West Indies.	Acute Pleurisy.
Foss, William L.	St. Croix, West Indies.	Blood Letting.
Fox, Felix S.	Wilcox, Ala.	Pneumonia.
Fox, William H.	Hanover, Va.	Menstruation.
Gallaher, Thomas J.	Alleghany, Pa.	Scarlatina Anginosa.
Geoghegan, John A.	Mecklenburg, Va.	Cholera Infantum.
Gibson, David H.	Washington, Va.	Amenorrhœa.
Gloninger, D. Stanley	Lebanon, Pa.	Emansio Mensium.
Goodlet, William C.	Davidson, Tenn.	Typhus Fever.
Goodrum, Sieburn J.	Warren, Miss.	Pernicious Intermittent.
Graves, Thomas H.	Howard, Mo.	Pneumonia.
Gray, John Pardue	Centre, Pa.	Pathology of Remittent Fever.
Green, Simon T.	Franklin, N. C.	Febris Intermittens.
Grove, John B.	Augusta, Va.	Empiricism.
Grove, John H.	Lancaster, Pa.	Leucorrhœa.
Gruwell, John P.	Columbiana, Ohio.	Cause and Nature of Fever.
Hamill, George S.	Montgomery, Pa.	Solanum Dulcamara.
Hance, Francis W.	Ohio, Va.	Uterine Hemorrhage.
Hardeman, Glen O.	Saline, Mo.	Asiatic Cholera.
Harding, Thomas J.	Davidson, Tenn.	Scarlatina.
Hartmann, Philip C.	Barocoa, Cuba.	Gun-shot Wounds.
Harville, John W.	Hailsboro, N. H.	Tuberculosis.
Haywood, E. Burke	Wake, N. C.	Gonorrhœa.
Heckel, Fred. William	Chester, Pa.	Medical Abstractions.
Hewitt, Richard N.	Campbell, Va.	Enteric Fever.
Heysham, Charles Stewart	Montgomery, Pa.	Cold Water.
Hill, Samuel	Guilford, N. C.	Jaundice.
Hilligas, John G.	Montgomery, Pa.	Physiology of Digestion.
Holmes, Alexander R.	Bristol, Mass.	Phthisis Pulmonalis.
Holmes, J. B.	Charleston, S. C.	Gastritis.
Horner, Robert	Adams, Pa.	Physiology and Pathology of Stomach.
Hunt, William	Philadelphia, Pa.	Treatment of Aneurism.
Hunter, Edwin S.	Craven, N. C.	Acute Peritonitis.
Jameson, John R.	Marshall, Miss.	Etherization.
Jeter, Benjamin E.	Bedford, Va.	Gun Shot Wounds.
Jett, William N.	Westmoreland, Va.	Neuralgia.
John, Samuel Williamson	Perry, Ala.	Injurious effects of Tobacco upon the human system.
Koontz, Samuel C.	Fairfield, Ohio.	Loss of blood.
Lane, Samuel G.	Franklin, Pa.	Causes which influence the period of human life.
Laurens, R. C.	Charleston, S. C.	Amenorrhœa.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Lewis, James B.	Marengo, Ala.	Irritable Uterus.
Lewter, John T.	Hertford, N. C.	Colica Pictonum.
Lyddane, John L.	Montgomery, Md.	Cholera Infantum.
Macrae, John H.	Fauquier, Va.	Acute Pleuritis.
Martin, George	Delaware, Pa.	Croup.
Mason, Albert G.	Sussex, Va.	Cynanche Trachealis.
Massenburg, George	E. City, Va.	Water.
Mastin, Claudius H.	Madison, Ala.	Cynanche Trachealis.
Mebane, William T.	Guilford, N. C.	Cholera Epidemica.
Mish, Physick B.	Lebanon, Pa.	Leucorrhœa.
Mitchell, Henry S.	Bertie, N. C.	Vaccina.
Mordecai, Edward R.	Mobile, Ala.	The effects of Chloroform on the system, and its therapeutical application.
Morris, Beverly P.	Amherst, Va.	Pneumonia.
Moseley, Charles Floyd	Buckingham, Va.	Medical Associations.
M'Cleery, James R.	Fairfax, Ohio.	Syphilis.
M'Kinne, John L. T.	Wayne, N. C.	Chronic Anemia.
M'Kinnon, Archibald M.	Richmond, N. C.	Inflammation.
Nelson, W. Wilmer	Gloucester, Va.	Disease.
Nichol, William L.	Davidson, Tenn.	Distinction between Typhus and Typhoid Fevers.
Nicholson, William	Perquimans, N. C.	Astringents.
Pasteur, James M.	Green, Ala.	Fracture of the Clavicle.
Pate, Dooly	Williamson, Tenn.	Remittent Fever.
Patrick, Thomas J.	Guilford, N. C.	Marsh Miasma.
Peacock, Calvin C.	Edgecomb, N. C.	Acute Gastritis.
Pearson, John S.	Saline, Mo.	Progress of Medicine.
Peebles, Andrew J.	Northampton, N. C.	Acute Gastritis.
Penrose, R. A. F.	Philadelphia, Pa.	Mind and Body as influenced by Digestion.
Percy, Le Roy P.	Davidson, Tenn.	Acute Gastritis.
Porter, Edward Mulford	Cumberland, N. J.	Materia Alimentaria.
Pratt, Foster	Hardy, Va.	Menorrhagia.
Presson, John E.	Newcastle, Del.	Puerperal Peritonitis.
Quesenberry, William D.	Caroline, Va.	Febris Intermittens.
Rauch, John H.	Lebanon, Pa.	Convalaria Polygonatum.
Read, Louis W.	Montgomery, Pa.	Dysentery.
Reid, Robert King	Abbeville, S. C.	Indigenous Medical Plants of South Carolina.
Renick, Thomas B.	Greenbrier, Va.	Nervous Asthma.
Reynolds, Joseph M.	Green, Ala.	Anti-Anthropotoxicologia.
Rhoads, Charles	Northumberland, Pa.	Acute Gastritis.
Riebsam, Charles R.	Lycoming, Pa.	Toxicology.
Robinson, Joseph W.	Philadelphia, Pa.	Hereditary tendency of Phthisis Pulmonalis.
Rodgers, Samuel S.	Fayette, Pa.	Cholera Asiatica.
Sargent, Robert P.	Philadelphia, Pa.	Rabies Canina.
Schlatre, Romain	Iberville, La.	Asiatic Cholera.
Sevier, James M.	Green, Tenn.	Syphilis.
Shannon, B. Franklin	Schuylkill, Pa.	Spinal Curvature.
Shapleigh, Elisha B.	Philadelphia, Pa.	Arsenic.
Shaw, Thomas W., Jr.	Alleghany, Pa.	Acute Gastritis.
Sheppard, Joseph	Cumberland, N. J.	Dysentery.
Smallwood, Charles	Bertie, N. C.	Vaccinia.
Smallwood, R. Matlock	Gloucester, N. J.	Pneumonia.
Smith, Crawford E.	Saline, Mo.	Intermittent Fever.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Smith, Thomas C.	Marlborough, S. C.	Fracture of the Clavicle.
Smith, William Manlius	Onandaga, N. Y.	Fœtal Movements (so called).
Stees, Clinton G.	Philadelphia, Pa.	Pertussis.
Steiner, Lewis H.	Frederick, Md.	Physiological Effects of Sulphuric Ether.
Stephen, John	Berks, Pa.	Intermittent Fever.
Stout, T. Jefferson	Philadelphia, Pa.	Medical Properties of Papaveracea.
Talbot, Matthew	Sumter, Ala.	Variola.
Taylor, Archibald	Gloucester, Va.	Pleurisy.
Taylor, John W.	Madison, Va.	Organs of Digestion.
Taylor, Robert R.	Hanover, Va.	Hysteria.
Terry, Nathaniel J.	Pittsylvania, Va.	Pruritis Vulvæ.
Thomas, Howell M.	Henrico, Va.	Mercury in Syphilis.
Toole, T. Franklin	Choctaw, Ala.	Pulmonitis.
Tucker, Joel W.	Amelia, Va.	Enteric Fever.
Tucker, Joseph J. W.	Wake, N. C.	Materia Medica and Therapeutics.
Tunstall, Richard B.	Norfolk, Va.	Endocarditis.
Van Pearse, James	Fairfield, Ohio.	Cataract.
Vaughan, John N.	Nottoway, Va.	Typhoid Pneumonia.
Venable, Nathaniel H.	Prince Edward, Va.	Anæmia.
Walker, Sydenham C.	Franklin, Pa.	Erysipelas.
Wall, Alexander A.	Madison, Ala.	Dysenteria.
Wallace, Thomas F.	Perry, Ala.	Acute Rheumatism.
Ward, James R.	Green, Ala.	Irritable Uterus.
Waters, John F.	Rappahannock, Va.	Tetanus.
Waters, Richard J.	Mew Madrid, Mo.	Theories of Generation.
Weaver, Richard T.	Northampton, N. C.	Acute Enteritis.
Webb, William C.	Lafayette, Mo.	Typhoid Fever.
Wieslling, Jacob G.	Dauphin, Pa.	Medicine as illustrated by Physiology.
Williams, J. Josef	Fayette, Tenn.	Sensation.
Williamson, Charles Henry	Norfolk, Va.	Acute Pericarditis.
Wilson, Elias E.	Philadelphia, Pa.	Entozoa.
Wingfield, John A.	Sussex, Va.	Digestion.
Winslow, Caleb	Perquimans, N. C.	Catoptric examination of the Eye.
Woldridge, Ferdinand S.	Williamson, Tenn.	The Pulse.
Woolverton, John	Hunterdon, N. J.	Treatment of Fractures.
Worthington, William H.	Chester, Pa.	Febris Intermittens.

At a Public Commencement held July 3d, 1848, the following gentlemen received the Degree of Doctor of Medicine.

NAME.	RESIDENCE.	SUBJECT OF ESSAY.
Bishop, John L.	Southampton, Va.	Gastritis.
Lee, Richard Henry	Bucks, Pa.	Means of alleviating pain.
Lefebvre, Sully B.	New Orleans, La.	Hypertrophie du Cœur.
Lillard, John H.	Rutherford, Tenn.	Enteric Fever.
Lloyd, Henry C.	Bucks, Pa.	Acute Hepatitis.
Roberts, Gideon	Wayne, N. C.	Intermittent Fever.
Sherrard, J. Singleton	Frederick, Va.	Variola.
Stanton, Frederick	Adams, Miss.	Acute Gastritis.

TOTAL, 190.

W. E. HORNER, *Dean.*

UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT.

SESSION OF 1849-50.

The Lectures will commence on Monday, the 1st day of October, and be continued under the following arrangement, to the end of March ensuing.

Theory and Practice of Medicine,	By **Nathaniel Chapman**, M. D.
Anatomy,	" **William E. Horner**, M. D.
Materia Medica and Pharmacy,	" **George B. Wood**, M. D.
Chemistry,	" **James B. Rogers**, M. D.
Surgery,	" **William Gibson**, M. D.
Obstetrics and the Diseases of Women and Children,	" **Hugh L. Hodge**, M. D.
Institutes of Medicine,	" **Samuel Jackson**, M. D.

Clinical Instruction twice a week, at the Pennsylvania Hospital, by the Physicians and Surgeons of the Institution.

Demonstrative Instruction in Medicine and Surgery, twice a week, by the Professors of the Medical Faculty, assisted by **W. W. Gerhard**, M. D., and **Henry H. Smith**, M. D.

The rooms for Practical Anatomy will be open from October 1st to the end of March ensuing. **John Neill**, M. D., Demonstrator.

Amount of Fees for Lectures in the University,	$105
Matriculation Fee (paid once only),	5
Hospital Fee,	10
Practical Anatomy,	10
Graduating Fee,	30

The Commencement will take place early in the following April.

W. E. HORNER, M. D., *Dean of the Medical Faculty.*
386 *Chestnut Street, above Thirteenth, opposite the U. S. Mint.*

Philadelphia, June 1st, 1849.

UNIVERSITY OF NEW YORK.

MEDICAL DEPARTMENT—SESSION 1849-50.

The Lectures of the regular winter course will begin on Monday, October 29th, and be continued to the last of February.

Valentine Mott, M. D., Prof. of Surgery.
Granville S. Pattison, M. D., Professor of Anatomy.
Samuel H. Dickson, M. D., Professor of the Practice of Medicine.
Martyn Paine, M. D., Professor of the Institutes of Medicine and Materia Medica.
Gunning S. Bedford, M. D., Professor of Midwifery.
John W. Draper, M. D., Prof. of Chemistry.

The Surgical Clinique will be held every Saturday by Professor Mott; and the Obstetric Clinique, under the care of Professor Bedford, will commence to furnish cases to matriculated students early in October. The dissecting rooms will open as soon as the weather permits.

Clinical instruction is given at the New York Hospital every day. The Bellevue Hospital, the Eye and Ear Infirmary, and the Dispensaries are also open to students.

The fees for the full Course of Lectures $105. Matriculation fee $5. Practical Anatomy, $5. Graduation fee, $30.

A preliminary and gratuitous course of lectures will be given, as heretofore, in the month of October, commencing on the 8th, and continuing until the regular course begins. JOHN W. DRAPER, M. D., *Secretary of the Faculty.*

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1849–50.

The regular Course of Lectures will commence on Monday the 15th of October, and continue until the first day of March. The Annual Commencement for conferring degrees will be held *early in March*, instead of at the end of the month, as heretofore.

Robley Dunglison, M. D., Prof. of Institutes of Medicine, &c.
Robert M. Huston, M. D., Prof. of Materia Medica and General Therapeutics.
Joseph Pancoast, M. D., Prof. of Gen., Descriptive, and Surgical Anatomy.
John K. Mitchell, M. D., Prof. of Practice of Medicine.
Thomas D. Mütter, M. D., Prof. of Institutes and Practice of Surgery.
Charles D. Meigs, M. D., Prof. of Obstetrics and Diseases of Women and Children.
Franklin Bache, M. D., Prof. of Chemistry.
Ellerslie Wallace, M. D., Demonstrator of Anatomy.

Every Wednesday and Saturday in the month of October, and during the Course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the class. During the past year, about *fourteen hundred and fifty* cases were treated, and nearly *two hundred* operations performed. Amongst these were many major operations—as amputations of the thigh, leg, &c., lithotripsy, trephining, the operation for strangulated hernia, and tracheotomy.

The Lectures are so arranged as to permit the student to attend the Medical and Surgical practice and Lectures at the Pennsylvania Hospital.

On and after the 1st of October, the dissecting rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES.

Matriculation, which is paid only once,	$5 00
Each Professor, $15,	105 00
Graduation,	30 00

The number of Students during the last session was 477; and of Graduates 188.

R. M. HUSTON, M. D.,
Philadelphia, July 1849. *Dean of the Faculty*, No. 1 Girard Street.

UNIVERSITY OF LOUISIANA—MEDICAL DEPARTMENT.

The annual course of lectures in this institution will commence on Monday, 12th November, 1849, and continue four months.

Theory and Practice,	James Jones, M. D.
Surgery,	Warren Stone, M. D.
Chemistry,	J. L. Riddell, M. D.
Obstetrics and Diseases of Women and Children,	A. H. Cenas, M. D.
Anatomy,	A. J. Wedderburn, M. D.
Materia Medica and Therapeutics,	Gustavus A. Nott, M. D.
Physiology and Pathology,	Thomas Hunt, M. D.
Demonstrator of Anatomy,	Y. R. Le Monier, M. D.

Clinical instruction will be given daily at the Charity Hospital, in the various branches of medicine. The Professors being the attending surgeons and physicians of this extensive institution, during the session of the school, have every opportunity of making their lectures practical and thorough.

The Professor of Obstetrics, having under his control the female wards of the Hospital, is enabled to exhibit to the class those diseases peculiar to the sex, and also to furnish to the senior members as many cases of labour as are necessary to give them a practical acquaintance with this important branch.

The facilities for prosecuting the study of Practical Anatomy and Operative Surgery, are unrivalled.

TERMS.

For the ticket of each professor,	$15 00
Demonstrator's ticket,	10 00
Matriculation fee,	5 00
Diploma fee,	30 00

Lectures and attendance in the Hospital, and subjects for dissection, gratuitous.

GUSTAVUS A. NOTT, M. D., Dean.

UNIVERSITY OF MARYLAND.

The annual course of Medical Lectures will commence on the last Monday in October, at the University Buildings, Lombard Street, Baltimore, and continue until the 15th day of March following.

FACULTY.

Wm. E. A. Aiken, M. D., LL. D., Prof. of Chemistry and Pharmacy.
Nathan R. Smith, M. D., Prof. of Surgery.
Samuel Chew, M. D., Prof. of Therapeutics, Materia Medica, and Hygiène.
Joseph Roby, M. D., Prof. of Anatomy and Physiology.
Wm. Power, M. D., Prof. of Theory and Practice of Medicine.
Richard H. Thomas, M. D., Prof. of Obstetrics and Diseases of Women and Children.
Geo. W. Wiltenberger, M. D., Lecturer on Pathological Anatomy and Demonstrator of Anatomy.

The fee for attendance on the Lectures of each of the Professors is $15. Matriculation fee $5. Graduation fee (including diploma) $20. The ticket of Practical Anatomy is $10, and that of the Lectures on Pathological Anatomy $5. These last are required to be taken but once. Candidates for examination must have attended two full courses in this Institution, or one in this after one in some other respectable school.

With a Hospital, recently much enlarged, and now containing 150 beds attached to the Institution, and consequently under their personal control, the Faculty consider it absolutely essential that every pupil who resorts to the Institution, should avail himself of its advantages. They therefore require, from all candidates for graduation, evidence of attendance upon a course of clinical instruction. The clinical ticket is furnished to all matriculates without charge. Clinical Lectures on Medicine and Surgery are given by the Professors on cases at the Hospital, throughout the session, and the wards visited daily. Surgical operations are frequent, and an abundant opportunity is furnished to students for practical observation and study.

Anatomical *materiel* is abundant, and furnished at a moderate rate. In this respect, it is doubted whether any school in the country can equal the facilities afforded here. The rooms are spacious, well ventilated, warmed, and lighted with gas.

This Institution was chartered in 1807. With large and commodious buildings, an extensive museum, a well-regulated General Hospital, and all the other means adapted for purposes of thorough public instruction, the Faculty see with pleasure, in their yearly increasing classes, the best evidence that a high estimate is placed on the professional education obtained at the University of Maryland.

W. E. A. AIKEN, Dean.

MEDICAL DEPARTMENT OF HAMPDEN SIDNEY COLLEGE,

RICHMOND, VA.

The *twelfth* annual session of this institution will commence on Monday the 23d of October, 1849, and continue until the middle of March ensuing.

R. L. Bohannan, M. D., Obstetrics and Diseases of Women and Children.
L. W. Chamberlayne, M. D., Materia Medica and Therapeutics.
S. Maupin, M. D., Chemistry and Pharmacy.
Charles Bell Gibson, M. D., Surgery and Surgical Anatomy.
Carter P. Johnson, M. D., Anatomy and Physiology.
David H. Tucker, M. D., Theory and Practice of Medicine.
Frederick W. Roddey, M. D., Demonstrator of Anatomy.

Medical and *Surgical Cliniques* will be regularly given in the College Infirmary, and Richmond Almshouse, and ample facilities will be afforded for the study of Practical Anatomy.

Charges.—Matriculation ticket, $5. Professor's fees $105. Practical Anatomy (one course required of the candidate for graduation), $10.

Board, including fuel, lights, and servants' attendance, from $2 50 to $5 per week.

S. MAUPIN, M. D., *Dean of the Faculty.*

COLLEGE OF PHYSICIANS AND SURGEONS, OF THE UNIVERSITY OF THE STATE OF NEW YORK.

The Forty-Third session of the College will be commenced on Monday 15th of October, 1849, and continued until the second Thursday in March, 1850 (commencement day).

Alexander H. Stevens, M. D., LL.D., President of the College, and Emeritus Professor of Clinical Surgery.

Joseph M. Smith, M. D., Professor of the Theory and Practice of Medicine and Clinical Medicine.

John B. Beck, M.D., Professor of Materia Medica and Medical Jurisprudence.

John Torrey, M. D., LL.D., Professor of Botany and Chemistry.

Robert Watts, Jr., M. D., Professor of Anatomy.

Willard Parker, M. D., Professor of the Principles and Practice of Surgery.

Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Alonzo Clark, M. D., Professor of Physiology and Pathology (including Microscopy.)

Charles E. Isaacs, M. D., Demonstrator of Anatomy.

FEES.—Matriculation Fee, $5; Fees for the full Course of Lectures, $; Demonstrator's ticket, $5 ; Graduation Fee, $25; Board, average $3 per week.

Clinical instruction is given at the New York Hospital daily, by the Medical Officers (Professor Smith being one of them), fee $8 per annum ; at the Eye Infirmary, without fee ; and upwards of 1000 patients are annually exhibited to the class in the College Clinique. Obstetrical cases and subjects for dissection are abundantly furnished through the respective departments.

The Annual Commencement is held at the close of the session ; there is also a semi-annual examination in September. The requisites for graduation are—21 years of age, three years of study, including two full Courses of Lectures, the *last* of which must have been attended in this College, and the presentation of a Thesis on some subject connected with Medical Science.

In addition to the regular Course, and not interfering with it, a Course of Lectures will be commenced on Monday, 1st October, and continued until the 15th October. This Course will be *free.*

R. WATTS, Jr., M. D., *Secretary to the Faculty.*

College of Physicians and Surgeons,
67 *Crosby Street, New York.*

PHILADELPHIA COLLEGE OF MEDICINE,

Winter Course.

The Winter Course of Lectures will commence on 15th October, 1849, and continue until 1st March, 1850. A preliminary course will be given, commencing on Monday, Oct. 1st, 1849, by the following faculty.

James McClintock, M. D., General, Special, and Surgical Anatomy.

Henry Gibbons, M. D., Institutes of Medicine, and Medical Jurisprudence.

Alfred L. Kennedy, M. D., Medical Chemistry.

Rush Vandyke, M. D., Materia Medica and General Therapeutics.

Thomas D. Mitchell, M. D., Theory and Practice of Medicine,

Chris'r C. Cox, M. D., Obstetrics and Diseases of Women and Children.

James McClintock, M. D., Principles and Practice of Surgery.

M. W. Dickeson, M. D., Comparative and Pathological Anatomy.

Richard Burr, M. D., Prosector of Surgery.

N. R. Mosely, M. D., Demonstrator of Anatomy.

Fee for the full Course, $84. Matriculation, paid once only, $5. Graduation, $30. Fee for those who have attended two full courses in other Colleges, $45. Dissecting ticket, $10. Perpetual ticket, $150.

Full course candidates are furnished with the Hospital ticket without charge. Clinical instruction is also given in the College.

The fee for the respective tickets may be paid to each member of the Faculty, or the whole amount may be paid to the Dean, who will issue a certificate which will entitle the student to the ticket of each Professor.

The Spring Course of lectures will commence about the 19th of March, 1850. Degrees will be conferred about 20th July 1850.

For further information inquire of

JAMES McCLINTOCK, M. D., Dean,
No. 1 N. Eleventh St.

Philadelphia, June 18, 1849.

PENNSYLVANIA COLLEGE, MEDICAL DEPARTMENT.

NINTH, BELOW LOCUST STREET, PHILADEPLHIA.

The Session of 1849–50 will commence on Monday, October 15, 1849, and be continued until the 1st of March, ensuing.

The Faculty is constituted as follows:—

William Darrach, M.D., Professor of the Principles and Practice of Medicine.
John Wiltbank, M.D., Professor of Obstetrics and the Diseases of Women and Children.
Henry S. Patterson, M.D., Professor of Materia Medica and Therapeutics.
William R. Grant, M.D., Professor of Anatomy and Physiology.
David Gilbert, M.D., Professor of the Principles and Practice of Surgery.
Washington L. Atlee, M.D., Professor of Medical Chemistry.

Clinical instruction at the Pennsylvania Hospital, Pine Street, provided for all second course students, at the expense of the Faculty. Fees: Matriculation (to be paid once only), $5 00; for each ticket, $15 00; Graduation, $30 00.

The Registrar's address is No. 92 Arch Street, Philadelphia.

HENRY S. PATTERSON, M.D., *Registrar.*

TRANSYLVANIA UNIVERSITY—MEDICAL DEPARTMENT.

The Thirty-Second Session will open on the first Monday in November next, under the direction of the following faculty, viz.:—

Benj. W. Dudley, M.D., Professor of the Principles and Practice of Surgery.
Robert Peter, M.D., Professor of Chemistry and Pharmacy.
James M. Bush, M.D., Professor of Special and Surgical Anatomy.
Samuel Annan, M.D., Professor of Theory and Practice of Medicine.
Ethelbert L. Dudley, M.D., Professor of General and Pathological Anatomy and Physiology.
Henry M. Bullitt, M.D., Professor of Materia Medica and Therapeutics.
William M. Boling, M.D., Professor of Obstetrics and the Diseases of Women and Children.
H. M. Skillman, M.D., Demonstrator of Anatomy.

The cost of a full course is one hundred and five dollars, invariably in advance. The Matriculation and Library ticket is five dollars. The Dissecting ticket, ten dollars. The Graduation Fee is twenty-five dollars. Boarding and lodging from $2 to $3 per week.

ROBERT PETER, M.D., *Dean of the Faculty.*
Lexington, Ky., June 27, 1848.

PRIVATE OFFICE INSTRUCTION.

The Subscribers receive Students into their office for either the whole, or part of their period of study.

Their pupils receive examinations upon the various branches of medicine *daily, throughout the year*, with the exception of the usual Summer recess. They also have access to the full Course of Summer Lectures at the Philadelphia Medical Institute; likewise to the daily Clinical Course at the Pennsylvania Hospital, from April to November; and enjoy the usual facilities of an office—such as Books, Plates, Preparations, &c.

Fee, for the whole term of study (3 years), in advance,	$250
" " one year,	100

JOHN NEILL, M.D., *Demonstrator of Anatomy in the University of Penna.*
JOHN J. REESE, M.D., *Lecturer on Materia Medica in the Phila. Med. Institute.*
Philadelphia, April, 1849.

THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR OCTOBER 1849.

CONTRIBUTORS TO THIS VOLUME.

William H. Anderson, M. D., *of Mobile, Alabama.*

Washington L. Atlee, M. D., *Professor of Medical Chemistry in the Medical Department of Pennsylvania College, Philadelphia, Penn.*

Dr. W. Chew Van Bibber, *of Baltimore.*

James Blake, M. D., F.R.C.S.E., *Professor of Anatomy at the St. Louis University.*

J. E. Breed, M.D., *of Smithville, Jefferson County, New York.*

Robert Bridges, M. D., *Prof. of Chemistry in the Philadelphia College of Pharmacy.*

Waldo (I.) Burnett, *of Boston.*

Samuel Chamberlaine, M. D., *of Philadelphia.*

Edward H. Clarke, M. D., *of Boston.*

D. F. Condie, M. D., *of Philadelphia.*

Jno. C. Dalton, Jr., M. D., *of Lowell, Mass.*

M. G. Delany, M.D., *Surgeon U. S. Navy.*

Samuel Henry Dickson, M. D., *Prof. of Theory and Practice of Medicine in the University of the City of New York.*

Pliny Earle, M. D., *late Physician to the Bloomingdale Asylum for the Insane.*

Gouverneur Emerson, M. D., *of Philadelphia.*

George Fox, M. D., *one of the Surgeons of Pennsylvania Hospital.*

Henry Hartshorne, M. D., *of Philadelphia.*

Samuel Jackson, M. D., *Professor of the Institutes of Medicine in the University of Pennsylvania.*

E. Jarvis, M. D., *of Dorchester, Mass.*

John P. Mettauer, M.D., *of Virginia.*

Jno. Neill, M. D., *Demonstrator of Anatomy in the University of Pennsylvania.*

George W. Norris, M. D., *Surgeon to the Pennsylvania Hospital.*

Samuel Parkman, M. D., *of Boston.*

J. F. Peebles, M. D., *of Petersburgh, Va.*

Henry A. Ramsay, M. D., *Raysville, Ga.*

F. W. Sargent, M. D., *one of the Physicians to the Girard College for Orphans.*

Lewis Shanks, M. D., *of Memphis, Tennessee.*

Richard McSherry, M. D., *Passed Assistant Surgeon, U. S. Navy.*

A. B. Shipman, M. D., *Professor of Surgery in Indiana Med. College.*

Edward R. Squibb, *Assistant Surgeon of the United States Navy.*

Moreton Stillé, M. D., *of Philadelphia.*

A. Stillé, M. D., *one of the Physicians to St. Joseph's Hospital.*

J. J. Thweatt, M.D., *Petersburgh, Va.*

Richard H. Townsend, M.D., *of Philadelphia.*

James D. Trask, M. D., *Whiteplains, Westchester County, New York.*

John W. H. Trugien, M. D., *of Portsmouth, Va.*

Dr. N. Ward, *of Burlington, Vermont.*

J. Yale Ware, *of Massachusetts.*

J. Mason Warren, M. D., *of Boston.*

William M. Wood, M. D., *Surgeon U. S. Navy.*

Thomas H. Yardley, M. D., *Consulting Physician to the Lying-in Department of the Northern Dispensary of Philadelphia.*

TO READERS AND CORRESPONDENTS.

The following works have been received:—

Observations upon Bulam, Vomito-Negro or Yellow Fever, with a Review of "A Report upon the Diseases of the African Coast. By Sir William Burnett, and Dr. Bryson," proving its highly contagious powers. By Sir William Pym, R. C. H., Inspector-General of Hospitals. London, John Churchill, 1848. (From Dr. M'William.)

An Account of the Origin, Spread, and Decline of the Epidemic Fevers of Sierra Leone; with Observations on Sir William Pym's Review of the "Report on the Climate and Diseases of the African Station." By Alexander Bryson, M. D., R. N. London, Henry Renshaw, 1849. (From Dr. M'William.)

Copy of a Letter from Sir William Pym, Superintendent-General of Quarantine, to the Lords of the Privy Council, containing Observations upon Dr. King's Report upon the Boa Vista Fever in 1845. London, 1848. (From Dr. M'William.)

Clinical Lectures on the Physical Diagnosis of Phthisis, delivered at the Hospital for Consumption and Diseases of the Chest. By Richard Payne Cotton, M. D., M. R. C. P. London, 1849. (From the Author.)

Eighteenth and Nineteenth Annual Reports of the Belfast District Asylum for the Insane Poor of the Counties of Antrim and Down, and county of the town of Carrickfergus, for the years ending 31st March, 1848 and 1849. Drawn up by the Resident Physician. Belfast, 1848–1849. (From Robert Stewart, M. D., R. P.)

Transactions of the Provincial Medical and Surgical Association. Vol. xvi. Part ii. London, 1849. (From the Association.)

Principles of Mechanics, Machinery, and Engineering. By Julius Weisbach, Professor of Mechanics and applied Mathematics in the Royal Mining Academy at Frieberg. First American edition. Edited by Walter R. Johnson, Civil and Mining Engineer. In two vols. Illustrated with 813 engravings on wood. Vol. II. Applied Mechanics. Philadelphia, Lea & Blanchard, 1849. (From the Publishers.)

The Dispensatory of the United States of America. By George B. Wood, M. D., Prof. Mat. Med. and Pharm. in University of Pennsylvania, and Franklin Bache, M. D., Prof. Chem. in Jefferson Medical College. Eighth edition, carefully revised. Philadelphia, Grigg, Elliot & Co., 1849. (From the Authors.)

A Dissertation on the Practice of Medicine. Containing an Account of the Causes, Symptoms, and Treatment of Diseases, and adapted to the use of Physicians and Families, By Tomlinson Fort, M. D. Milledgeville, Ga., 1849. (From the Author.)

Proceedings of the Ohio Medical Convention, held at Columbus, on the 5th of June, 1849. Columbus, Ohio, 1849.

Proceedings of the State Medical Convention, held at Raleigh, April, 1849.

And Constitution and Medical Ethics of the Medical Society of the State of North Carolina, then adopted. Raleigh, N. C., 1849.

Cholera: its Causes, Symptoms, and Treatment considered and explained. By J. P. Batchelder, M.D., of New York City. New York, 1849. (From the Author.)

The Pathology and Treatment of Asiatic Cholera, so called. By A. L. Cox, M.D. New York, 1849. (From the Author.)

Lecture on Epidemic Cholera, delivered in the Hall of the Phil. Coll. Med., in May, 1849, at the Request of the Class. By T. D. Mitchell, M.D., Prof. Theory and Prac. Med. Philadelphia, 1849.

Report on the Cholera in Paris, published by authority of the French Government. Translated from the original and printed, by recommendation of the Board of Health and the Academy of Medicine of the City of New York. New York, S. S. & W. Wood, 1849. (From the Publishers.)

The Pathology and Treatment of Cholera: with an Appendix, containing his latest Instructions to Planters and Heads of Families (remote from medical advice), in regard to its Prevention and Cure. By Saml. A. Cartwright, M.D. New Orleans, 1849.

A Practical Treatise on Asiatic Cholera, which every person should read, as it may be the means of saving the lives of thousands. By Thompson McGown, M.D., Graduate of Transylvania University. Philadelphia, 1849. (From the Author.)

Sixty-Second Annual Report of the Regents of the University of the State of New York. Made to the Legislature, March 1st, 1849. Albany, 1849. (From Dr. T. R. Bule.)

The Twenty-Fifth Annual Report of the Officers of the Retreat for the Insane, at Hartford, Conn. April, 1849. (From John S. Butler, M.D.)

Tenth Annual Report of the Directors and Superintendent of the Ohio Lunatic Asylum to the 47th General Assembly of the State of Ohio, for the year 1848. Columbus, 1849. (From Wm. M. Awl, M.D.)

Valedictory Address delivered to the Class in the Medical College of Ohio, at the close of the Session of 1848–49. By L. M. Lawson, M.D., Prof. of Mat. Med. and Therap. and Gen. Path. Published by the Class. Cincinnati, 1849. (From the Author.)

An Essay on Intestinal Auscultation. By Charles Hooker, M.D., Prof. of Anat. and Phys., in Yale College. Boston, 1849. (From the Author.)

Circular of the Medical Faculty of Harvard University, including Reports of Cases, in the Massachusetts General Hospital. Boston, 1849.

Annual Announcement of the St. Louis University, Session 1849–50. St. Louis, 1849.

The following Journals have been received in exchange:—

Revue Médico-Chirurgicale de Paris. Sous la Direction of M. Malgaigne. June, July, August, 1849.

Gazette Médicale de Paris. March, April, May, June, and July, 1849 (except Nos. 18 and 29).

Revue Médicale Française et Etrangère. January, February, March, April, 1849.

Annales Médico-Psychologiques. January, April, 1849.

Annales de Thérapeutique Médicale et Chirurgicale et de Toxicologie. Publiées par M. le Docteur Rognetta. February, March, 1849.

Journal des Connaissances Médico-Chirurgicales. Publie par Le Dr. A. Martin-Lauzer. April, May, June, July, 1849.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. March, April, May, June, July, 1849.

The Edinburgh Medical and Surgical Journal. July, 1849.

The London Medical Gazette. June, July, August, 1849.

The British and Foreign Medico-Chirurgical Review. July, 1849.

Monthly Journal and Retrospect of the Medical Sciences. Edited by Geo. E. Day, F. R. C. P., A. Fleming, M. D., and W. T. Gairdner, M. D. July, August, and September, 1849.

London Journal of Medicine, a Monthly Record of the Medical Sciences. July, August, and September, 1849.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. July, 1849.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M. D. January, June, 1849.

Dublin Medical Press. June, July, and August, 1849.

The Dublin Quarterly Journal of Medical Sciences. August, 1849.

Provincial Medical and Surgical Journal. Edited by a Committee of the Worcester Council. Foreign Editor, Dr. Ranking. June, July, and August, 1849.

The Medical Times. June, July, and August, 1849.

The British American Journal of Medical and Physical Science. Edited by Archibald Hall, M. D. June, July, August, 1849.

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society. Edited by Joseph Parrish, M. D. July, 1849.

The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum. Utica, July, 1849.

The Boston Medical and Surgical Journal. Edited by J. V. C. Smith, M. D. July, August, and September, 1849.

The Medical Examiner. Edited by Drs. F. G. Smith, and David H. Tucker. July, August, and September, 1849.

The New Orleans Medical and Surgical Journal. Edited by A. Hester, M. D. July, September, 1849.

The New York Journal of Medicine and the Collateral Sciences. July, Sept., 1849.

The Western Lancet and Hospital Reporter. Edited by Drs. L. M. Lawson, and John P. Harrison. July, August, September, 1849.

The American Journal of Science and Arts. Conducted by Profs. B. Silliman, and B. Silliman, Jr., and James D. Dana. July, September, 1849.

The Charleston Medical Journal and Review. Edited by P. C. Gaillard, M. D., and H. W. Desaussure, M. D. July, September, 1849.

Transylvania Medical Journal. Edited by E. L. Dudley, M. D. July, 1849.

The North-Western Medical and Surgical Journal. Edited by John Evans, M. D., and E. G. Meek, M. D. July, 1849.

The Southern Medical and Surgical Journal. Edited by Paul F. Eve, M. D. July, August, and September, 1849.

The Ohio Medical and Surgical Journal. Edited by John Butterfield, M. D. July, September, 1849.

The Western Journal of Medicine and Surgery. Edited by L. P. Yandell, M. D., and T. S. Bell, M. D. July, August, September, 1849.

The American Journal of Pharmacy, published by authority of the Philadelphia College of Physicians. Edited by Joseph Carson, M. D., and W. Procter, Jr. July, 1849.

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science. Edited by Austin Flint, M. D. June, July, August, and September, 1849.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Lea & Blanchard, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or to Wiley & Putnam, *New York;* or W. D. Ticknor, *Boston;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

New Publications.—Messrs. Lea and Blanchard have just published the very valuable Treatise on the Diseases of the Bones, by Edward Stanly, Esq., Surgeon to St. Thomas's Hospital.

The same publishers have, we learn, just ready for publication, a new edition, with revisions, of Colombat on the Diseases of Females, translated by Prof. Meigs.

Also, the excellent work of Jongh on the Cod Liver Oil, translated, with many additions, by Edward Carey, M. D.

Likewise, the very valuable new work of Dr. Churchill, on the Diseases of Infants and Children. We have seen a large portion of this work, and feel confident that it will fully sustain, if not even increase, the high reputation of its author as a learned and judicious writer.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XXXVI. NEW SERIES.

OCTOBER, 1849.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Statistics of the Mortality following the Operation of Tying the Femoral Artery. By George W. Norris, M.D., Surgeon to the Pennsylvania Hospital. - - - - - - . - - - - 313

II. Case of Successful Extirpation of a Fibrous Tumour of the Right Ovary by the large Peritoneal Section. By Washington L. Atlee, M.D., Professor of Medical Chemistry in the Medical Department of Pennsylvania College, Philadelphia, Penn. (With two wood cuts.) - - - 336

III. Ligature of the Common Carotid Artery. By John P. Mettauer, M.D., LL.D., Professor of Principles and Practice of Medicine and Surgery in the Medical Department of Randolph Macon College, Virginia. 348

IV. Case of Lead Poisoning, with Recovery. By Jno. C. Dalton, Jr., M.D. Read before the Boston Society for Medical Observation, June 5, 1848. 356

V. A Detail of certain Experiments, performed by MM. Magendie and Bernard, in the College of France. By William H. Anderson, M.D., of Mobile, Alabama. - - - - - - - 368

VI. History of Two Cases of Aneurism, treated in the Pennsylvania Hospital. By George Fox, M.D., one of the Surgeons. - - - 377

VII. Case of Cerebral Irritation. By Edward R. Squibb, M.D., Assistant Surgeon of the United States Navy. - - - - - - 383

VIII. Notes of Hospital Cases. By Henry Hartshorne, M.D. - - 388

IX. Thoughts on Suits for Malpractice, suggested by certain Judicial Proceedings in Erie County, Pennsylvania. By William M. Wood, M.D., U.S. Navy. - - - - - - - - - - - 395

X. Case of Imperforate Vagina, and Malformation of Superior Portion—Operation—Cure. By A. B. Shipman, M.D., Prof. Surgery Indiana Med. College. - . - - - - - - - 401

XI. On the Influence of Sea Life upon Health. [Communicated by Thomas Harris, M.D., Chief Bureau of Medicine and Surgery, U. S. Navy.] By Richard McSherry, M.D., Passed Assistant Surgeon, U.S. Navy.] - 404

XII. Case of Congenital Deficiency of the Superior Portion of the Cranium. By John W. H. Trugien, M.D., of Portsmouth, Va. - - - 407

ART. PAGE

XIII. Case of Monstrosity. Deficiency of posterior parts of Cranium and Spinal Column—Deformity of Genital Organs, &c. By J. E. Breed, M.D., of Smithville, Jefferson County, New York. (With three wood cuts.) - - - - - - - - - 408

REVIEWS.

XIV. Experimental and Practical Researches on the Structure and Function of Blood Corpuscles; on Inflammation, and on the Origin and Nature of Tubercles in the Lungs. By William Addison, F. L. S. (Transactions of Provincial Medical and Surgical Association, Vol. XI. p. 233.) London, 1843.

The Actual Process of Nutrition in the Living Structure demonstrated by the Microscope; and the Renewal of the Tissues and the Secretions from the Blood thereby illustrated. By William Addison, F. L. S. (Transactions of the Provincial Medical and Surgical Association, Vol. XII. p. 235.) 1844.

On Healthy and Diseased Structure, and the True Principles of Treatment for the Cure of Disease, especially Consumption and Scrofula; founded on Microscopical Analysis. By William Addison, M. D., F. R. S., Licentiate of the Royal College of Physicians. 8vo. pp. 320. London: Churchill, 1849. - - - - - - - - - - 411

XV. On Gout—its History, its Causes, and its Cure. By William Gairdner, M. D. 12mo. pp. 232. London, 1849. - - - - 422

BIBLIOGRAPHICAL NOTICES.

XVI. A Theoretical and Practical Treatise on Human Parturition. By H. Miller, M. D. Professor of Obstetrics and the Diseases of Women and Children, in the Medical Department of the University of Louisville. Louisville, 1849: 8vo. pp. 463. - - - - - - - - 433

XVII. A Dissertation on the Practice of Medicine, containing an Account of the Causes, Symptoms, and Treatment of Diseases, and adapted to the Use of Physicians and Families. By Tomlinson Fort, M. D. Milledgeville, Georgia, 1849: 8vo. pp. 740. - - - - - - 434

XVIII. Lectures on the Diseases of Infancy and Childhood. By Charles West, M.D., Fellow of the Royal College of Physicians, Senior Physician to the Royal Infirmary for Children, Physician-Accoucheur to the Middlesex Hospital, and Lecturer on Midwifery at Saint Bartholomew's Hospital. Philadelphia, Lea & Blanchard, 1850: 8vo. pp. 451. - 436

XIX. Clinical Lectures on the Physical Diagnosis of Phthisis. By Richard Payne Cotton, M.D. London, 1849: pp. 23. - - - - - 436

XX. Epidemic Cholera—Its History, Causes, Pathology, and Treatment. By C. B. Coventry, M. D. Professor of Obstetrics and Medical Jurisprudence in the Medical Institution of Geneva College; Professor of Physiology and Medical Jurisprudence in the University of Buffalo. Buffalo, 1849: 12mo. pp. 119.

A Practical Treatise on Asiatic Cholera, which every person should read, as it may be the means of saving the lives of thousands. For the benefit of the public it is issued in Pamphlet form; taken from a new Medical work, now being published on Diseases of the South. By Thompson McGown, M.D. Graduate of Transylvania University; Member of the Lexington Medical Society, and a Practitioner of the South. Philadelphia, 1849: 8vo. pp. 30.

Letters upon Cholera. By Frank A. Ramsey, M.D. Knoxville, Tennessee, 1849: 8vo. pp. 30.

Cholera—Its Causes, Symptoms, and Treatment considered and explained. By I. P. Batchelder, M.D., of New York City. New York, 1849: 12mo. pp. 45.

ART. PAGE

Lecture on Epidemic Cholera, delivered in the Hall of the Philadelphia College of Medicine, in May 1849, at the Request of the Medical Class. By Thomas D. Mitchell, M. D. Professor of the Theory and Practice of Medicine in the Philadelphia College of Medicine, and late Professor in the Medical Department of Transylvania University, Lexington, Kentucky. Philadelphia, 1849: 8vo. pp. 22.

The Pathology and Treatment of Asiatic Cholera, so called. By A. L. Cox, M. D. New York, 1849: 12mo. pp. 54.

The Pathology and Treatment of Cholera: with an Appendix, containing his latest Instructions to Planters and Heads of Families, remote from medical advice, in regard to its Prevention and Cure. By Samuel A. Cartwright, M. D. New Orleans, 1849: 8vo. pp. 40. - - - 437

XXI. The Treatment of Rheumatic Diseases by Lemon Juice; with Illustrative Cases from Hospital Practice. By G. Owen Rees, M. D., F.R.S., &c. &c. London, Longman & Co., 1849: pp. 38, 8vo. - - - 443

XXII. Report on the Practical Operation of the Law relating to the Importation of Adulterated and Spurious Drugs, Medicines, &c. By M. J. Bailey, M. D. Special Examiner of that Class of Merchandise in the United States Customs, at the Port of New York. Read before the New York Academy of Medicine, June 6th, 1849. Published by order of the Academy. New York, 1849; 8vo. pp. 20. - - - - - 446

XXIII. The Dispensatory of the United States of America. By George B. Wood, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania, &c. &c., and Franklin Bache, Professor of Chemistry in Jefferson Medical College of Philadelphia. Eighth edition, carefully revised. Philadelphia, Grigg, Elliot & Co., 1849: 8vo. pp. 1380. - - - - - - - - - - - 450

XXIV. A Dictionary of Dental Science, Biography, and Medical Terminology. By Chapin A. Harris, M. D., D. D. S., Professor of the Principles and Practice of Dental Surgery in the Baltimore College, &c. &c. Philadelphia, Lindsay & Blakiston, 1849: 8vo. pp. 780. - - 450

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

PAGE

1. Transplantation of Testicles. By Professor Berthold. - - 451
2. On the Minute Anatomy of the Sudorific Organs. By G. Rainey. 452
3. Function of the Cerebellum. By R. Dunn, Esq. - - - 454
4. On the Power to repair Damages sustained by Injury, and to Reproduce Lost Parts. By Mr. Paget. - - - - - - 454
5. Microscopical Examination of the Contents of the Hepatic Ducts, with Conclusions founded thereon. By T. Wharton Jones, F. R. S. - - - - - - 458

ORGANIC CHEMISTRY.

PAGE
6. Sugar found in the Blood, Tissue of the Kidney, &c., but not in the Spleen and Pancreas, of a Diabetic Patient, who died suddenly. By M. Bernard. - 458
7. On the Composition of the Salts of the Blood, and of their Relation to the Formation of Vesical Calculi. By M. Verdeit. - - 459
8. Investigations and Experiments on Human Blood. By Dr. Giovanni Polli. - - - - 459

MATERIA MEDICA AND PHARMACY.

9. On Glycerine and its Therapeutic Uses. - - - - - - 461
10. On Large Doses of Subnitrate of Bismuth in Gastro-Intestinal Affections. By M. Monneret. 462
11. Concealing the Taste of Fish Oil. By M. Fredericq. - - 463
12. Therapeutic Action of Aconitum Napellus. By M. Tessier. 463

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. The Microscopic Constituents of Tubercular Deposits. By Albers. - - - - - - 466
14. Preparations Illustrative of the Course of Tubercle in the Lungs. By Dr. Bennett. - 466
15. On the Use and Administration of Cod-Liver Oil in Pulmonary Consumption. By C. J. B. Williams, M. D. - - - 467
16. On the Treatment of Pericarditis; especially on the Effects of Blood-letting and Mercury in that Disease. By John Taylor, M. D. - - - - - - 468
17. Peculiar Forms of Choreic Affections. By R. B. Todd. - 470
18. Symptoms of Partial Chorea. By R. B. Todd, M. D. - - 470
19. On Catarrh of the Mouth. By Pfeufer. - - - - - - 472
20. Angina Pharyngea. By M. Velpeau. - - - - - - 473
21. Dropsy after Scarlatina. By Dr. F. J. Behrend. - - - 473
22. Hydrophobia. By Dr. Christison. - - - - - - 474
23. Spasm of the Glottis—Change of Air as a Remedy. By Mr. John Roberton. - - - 476
24. Coffee, as a Cure for Hooping-Cough. - - - - - - 477
25. On Intermittent Fever in Young Children. By M. Valleix. - - - - - - 479
26. Melæna in Children. By M. Rilliet. - - - - - - 481
27. On Cephalæmatoma. By M. Chassaignac. - - - - 482

SURGICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL SURGERY.

28. Repair of Fractured Bone. By Mr. James Paget. - - - 483
29. On the Processes of Repair and Reproduction after Injuries. By Mr. James Paget. - - 485
30. Difference between Subcutaneous Injuries and those open to the Air. By James Paget, Esq. 488
31. Modes of Healing of Open Wounds. By James Paget, Esq., 489
32. On the Alliances of Erysipelas. By Dr. Gull. - - - - - 492
33. Medical and General Treatment of Local Disease in Preference to Operation. By Thomas Hunt, Esq. - - - - - 498
34. Aneurism of the Axillary Artery, Ligature of the Subclavian. By F. Le Gros Clark, Esq. - 499
35. Aneurism of the Axillary Artery. By Mr. Henry Hancock, 500
36. Case of Popliteal Aneurism. By J. D. Wright. - - - 502
37. Popliteal Aneurism successfully treated by Pressure. By Mr. Charles Hawkins, - - 503
38. Galvanic Acupuncture—Aneurism of the Subclavian Artery

PAGE
obliterated by it. By M. Abeille. 503
39. Dislocation of the Humerus, with fracture. By Mr. Syme - 504
40. Counter-openings. By M. Diday. - - - - - - - 504
41. Successful Treatment of Morbus Coxæ, in its first stage, by Mercury. By Dr. Bellingham, 505
42. Syphilitic Tubercles in the Larynx — Tracheotomy — Cure. By M. Ricord. - - - - 508
43. Traumatic Tetanus treated by Chloroform. By Dr. Samuel G. Wilmot. - - - - - 509
44. Case of Suffocation from the Closure of the Glottis by a piece of Meat. By R. P. Cotton, M.D. 509

OPHTHALMOLOGY.

45. On Sympathetic Ophthalmia. By Prof. Jacob. - - - 510
46. On the Removal of Osseous Cataract. By W. White Cooper, Esq. - - - - - - 513

MIDWIFERY.

47. A Report upon the Use of Chloroform in fifty-six Cases of Labour, occurring in the Dublin Lying-in Hospital. By John Denham, M. D. - - - - 514
48. Difficult Parturition. By Dr. Burden. - - - - - - 519
49. Case of Uterus Bicornis. By Dr. Generali. - - - - 522
50. Extra-uterine Fœtation—Gastrotomy. By M. Tueffard. - 522
51. Retroversion of Uterus during Pregnancy. By M. Van Heugel. 522
52. Apparent Intra-Uterine Amputation. By Dr. Ludwig Melicher. - - - - - 523
53. On Hemorrhage from the Umbilicus after the Separation of the Funis. By Edward Ray, Esq. - - - - - 525

CHOLERA.

54. On the Pathological Anatomy of Cholera. By Dr. W. T. Gairdner. - - - - 528
55. On the Pathological Anatomy of Cholera. By Dr. Raikem. - 533
56. Medicines at Long Intervals in Cholera—Value of Calomel and Carbonic Acid Gas at Short Intervals. By P. Niddrie, M. D. 536
57. Treatment of Cholera at La Charité in Berlin. By J. Lamprey, M. D. - - - - 537

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

58. Cases of Poisoning by the Acetate of Lead. By Dr. William Norris. - - - - - 538
59. Case of Poisoning by the Berries of the Daphne Mezereon. By Dr. Schwebes. - - - 541

MISCELLANEOUS.

60. A Statistical Inquiry, as to whether the Proportionate Frequency, the Nature, and the principal Characters of Diseases have undergone in the course of time, the great Modifications they are said to have done. By M. Valleix. - - - - 541
61. Important Discovery in Ventilation. By Dr. Chowne. - - 543
62. A New Disinfecting Apparatus. By Mr. Charles Watts. - 544

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

PAGE

Case of Pseudo-membranous Laryngitis. By Dr. W. Chew Van Bibber, of Baltimore. - - 545

Internal Mechanical Obstruction overcome by Mechanical Forces. By Richard H. Townsend, M.D., 546

Trismus Nascentium. By Samuel Chamberlaine, M.D. - - 547

Intermittent Fever. By Dr. N. Ward, of Burlington, Vermont. 548

Dysmenorrhœa. By Dr. N. Ward, of Burlington, Vermont. - - 548

DOMESTIC SUMMARY.

Successful Amputation at the Shoulder-Joint. By Dr. Paul F. Eve. - - - - - - 549

Spiritus Pyroxylicus in the Treatment of Diarrhœa and Dysentery. By David W. Yandell, M.D. - - - - - - 549

Wound of the External Carotid Artery—Ligature to the Common Carotid. By Dr. Geddings. 550

Asiatic Cholera successfully treated by Chloroform. By Dr. Anthony Bournonville. - - - 550

Successful Amputation at the Shoulder-Joint. By Dr. Wm. Byrd Page. - - - - - 551

Wound of the Heart—the Patient living ten Days. By Dr. W. S. Bowen. - - - - - - 551

Case of Spasms and Partial Trismus, from the prick of a Needle under the Thumb Nail. By S. P. Hildreth, M.D. - - - 552

Child killed by a Drop of Laudanum. By Dr. H. V. Wooten. - 554

Statistics of the Medical Colleges of the United States, for the Session of 1847–8. - - - 554

On the Use of the Ethereal Solution of Gun Cotton in the Cure of Erectile Tumours without Operation. By Dr. Brainard. - - 555

Cholera in the United States. - 555
- Philadelphia. - - - - 555
- Staten Island, New York. - 560
- New York. - - - - 562
- Boston. - - - - - 563
- New Orleans. - - - - 564
- Missouri, St. Louis. - - - 565
- Ohio, Cincinnati. - - - 565

Treatment of Cholera. - - 565

Local Treatment of Erysipelas. - 566

Fracture Tables, showing the Results of Treatment in one hundred and thirty-six Cases. By Dr. F. H. Hamilton. - - 567

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES

FOR OCTOBER 1849.

ARTICLE I.—*Statistics of the Mortality following the Operation of Tying the Femoral Artery.* By GEORGE W. NORRIS, M. D., Surgeon to the Pennsylvania Hospital.

THE following table of Ligature of the Femoral Artery, is drawn out upon a plan similar to that which I adopted in the 10th, 13th, and 14th volumes of this Journal, to show the mortality, accidents, &c., which follow the operations of ligature of the subclavian, iliac, and carotid vessels. They are parts of an extensive series, most of which I collected some years since, and which I have been in the practice of adding to, as I have met with cases in my reading. For the addition of some of those contained in the present table, however, I am indebted to the kindness of my friend, Mr. Thomas Greeves; and his industry and accuracy have, also, rendered those which had been collected by myself more complete in details than they otherwise would have been. The tables now offered, show strikingly the dangers attendant upon the Hunterian operation, for what appears to be the most common form of external aneurism; and, inasmuch as it is that to which the treatment by compression is more particularly adapted, I have added to it a tabular statement of the cases treated by the latter method, taken from Mr. Bellingham, together with such others as have come to my knowledge since the issue of his valuable little work from the press.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
1	J. Hunter	Male	45		Popliteal aneurism	3 years	Some on 15th day
2	J. Hunter	Male	40		Popliteal aneurism		14th day
3	J. Hunter	Male	35		Popliteal aneurism		14th day
4	J. Hunter	Male	36		Popliteal aneurism		29th day
5	J. Hunter	Male	42	Left side	Popliteal aneurism		11th day
6	Lynn	Male	25		Popliteal aneurism		13th day
7	Birch	Male	43	Right side	Femoral aneurism		
8	Cline	Male			Popliteal aneurism		Removed 9th day
9	Kast	Male	16		Femoral aneurism from wound	3 days	
10	Forster	Male	35		Popliteal aneurism		17th day
11	Earle	Male	50	Left side	Popliteal aneurism		15th day
12	Chopart			Left side	Popliteal aneurism		
13	Deschamps	Male	34	Left side	Popliteal aneurism	6 months	30th and 31st days*
14	Deschamps	Male	42	Left side	Popliteal aneurism		
15	Forster	Male	37	Left side	Popliteal aneurism	14 months	22d day
16	Deschamps	Male	32	Left side	Popliteal aneurism		
17	Forster	Male	37	Right side	Femoral aneurism	9 months	10th day
18	Home	Male	36		Popliteal aneurism		12th day
19	Pelletan	Male	60		Popliteal aneurism	15 days	
20	Harris	Male	32	Right side	Popliteal aneurism		11th day
21	Scarpa	Male	33	Right side	Popliteal aneurism		16th day
22	Home	Male	33	Right side	Popliteal aneurism	6 weeks	
23	Home	Male	33	Left side	Popliteal aneurism		16th day
24	Knight	Male	35	Left side	Popliteal aneurism		30th day
25	Home	Male	50		Popliteal aneurism		
26	Pelletan	Female	28	Right side	Popliteal aneurism		
27	Scarpa	Male	46	Left side	Popliteal aneurism	9 years	18th day
28	Scarpa	Male	42	Right side	Popliteal aneurism	6 months	18th day
29	Pelletan	Male	70	Right side	Popliteal aneurism		Remov'd 25th and 26th days
30	Pelletan	Female	34		Popliteal aneurism		Removed on 22d day
31	A. Cooper	Male	27		Popliteal aneurism	5 months	24th day
32	A. Cooper	Male	29	Right side	Popliteal aneurism	4 months	14th and 15th days*
33	Scarpa	Male	34	Left side	Femoral aneurism	25 months	14th day
34	Scarpa	Male	46	Right side	Popliteal aneurism	5 months	21st day
35	Mursinna	Male	54		Popliteal aneurism	7 months	
36	Blizard	Male	45		Popliteal aneurism	6 months	
37	Simpson	Male	28	Right side	Popliteal aneurism	2 months	
38	At Deal Hospital	Male			Popliteal aneurism	2 months	12th and 14th days*
39	Andrews			Right side	Popliteal aneurism	2 months	12th and 13th days*

* Double ligature.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
December, 1785	Cured			Trans. of a Soc. for Improvement of Med. and Chirurg. Knowledge, vol. i.
	Died	26th day	Hemorrhage	do do do vol. i.
	Cured			do do do vol. i.
	Cured			do do do vol. i.
	Cured			do do do vol. i.
	Cured			do do do vol. i.
Nov. 3d, 1786	Died	11th day	Hemorrhage	do do do vol. i.
	Died		Attacked by fever, of which he died	do do do vol. i.
May 28th, 1786	Cured			Massachusetts Med. Comm., 1790, vol. i.
Aug. 22d, 1791	Cured			Medical Facts and Observations, vol. v.
Jan. 28th, 1792	Cured			Trans. of a Soc. for Improvement of Med. and Chirurg. Knowledge, vol. i.
Mar. 28th, 1792	Died		Gangrene of limb	Obs. on Aneurism. Sydenham Society, 1844.
April 7th, 1792	Cured			do do do
June 19th, 1793	Died	In a few days	Purulent absorption	do do do
June 24th, 1793	Cured			Med. Facts and Obs., vol. v.
Sept. 9th, 1793	Cured			Obs. on Aneurism. Sydenham Society, 1844.
Aug. 11th, 1794	Cured			Med. Facts and Obs., vol. vi.
1794	Cured			Trans. of a Soc. for Improvement of Med. and Chirurg. Knowledge, vol. ii.
April, 1795	Died	7th day	Gangrene of limb	Clin. Chirurgicale, tom. i.
Nov. 15th, 1795	Cured			Trans. of a Soc. for Improvement of Med. and Chirurg. Knowledge, vol. ii.
Mar. 28th, 1796	Cured			On Aneurism. Edin., 1808.
June 9th, 1797	Cured			Trans. of a Soc. for Improvement of Med. and Chirurg. Knowledge, vol. ii.
July 14th, 1797	Cured			do do do vol. ii.
Sept. 29th, 1797	Cured			do do do vol. ii.
May 22d, 1798	Died	12th day	Hemorrhage	do do do vol. ii.
1798	Died	5 months after	Hectic & diarrhœa	Clin. Chirurgicale, tom. i.
April 28th, 1799	Died	37th day	Mortification of sac	On Aneurism.
Feb. 25th, 1800	Cured			do do
Feb., 1801	Died	43d day	Hemorrhage	Clin. Chirurgicale, tom. i.
Dec. 31st, 1801	Cured			do do tom. i.
April 13th, 1802	Cured			Lond. Med. & Phys. Journ., vol. viii.
May 3d, 1802	Cured			do do do vol. viii.
Mar. 3d, 1803	Cured			On Aneurism.
Feb. 25th, 1804	Cured			do do
April 1st, 1804	Died	33d day	Gangrene of limb	do do
July 24th, 1804	Died after amputation		Gangrene of limb	do do
Nov. 23d, 1804	Cured			Lond. Med. & Phys. Journ., vol. ii., N. S.
Mar. 18th, 1805	Died	27th day	Hemorrhage	do do do vol. xvii.
Oct. 19th, 1805	Cured			do do do vol. xvii.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
40	Dawson	Male	54		Popliteal aneurism	7 months	23d day
41	Hosack	Male	30	Right side	Femoral aneurism	2 months	13th day
42	Dupuytren	Female	62		Ruptured artery with fractured leg		15th day
43	Hutchison	Male	48		Femoral aneurism	5 years	14th day*
44	Ramsden	Male	32	Right side	Femoral aneurism	9 months	14th day
45	Ramsden	Male		Right side	Popliteal aneurism	3 weeks	8th day
46	Ramsden	Male	34	Left side	Femoral aneurism	15 weeks	14th and 15th days
47	Hutchison	Male	32		Popliteal aneurism	3 months	21st day
48	Kirby	Male	33	Left side	Popliteal aneurism		15th day
49	Hosack	Male		Right side	Femoral aneurism from wound	2 months	13th day
50	Onderdonk	Male	40		Popliteal aneurism	1 month	22d and 23d days*
51	Onderdonk				Wounded knee-joint		18th day*
52	Mackesy	Male	38	Right side	Femoral aneurism	1 year	
53	Lawrence	Male			Popliteal aneurism	1 year	18th day
54	Dickinson			Right side	Popliteal aneurism		
55	Dease	Male	26		Popliteal aneurism	6 months	In 24 hours removed
56	Travers				Aneurism of posterior tibial		5th day
57	Crampton	Male	39		Popliteal aneurism	4 weeks	On 3d day removed
58	Browne	Male	25		Popliteal aneurism from wound from necrosed femur	8 days	
59	Browne	Male	27		Aneurism of posterior tibial	2 months	9th and 11th days*
60	Norman	Male	36	Right side	Popliteal aneurism	1 week	15th day
61	Norman	Male	37	Left side	Popliteal aneurism	2 weeks	
62	Kirby	Male	23	Left side	Femoral aneurism		21st day
63	Norman	Male	38	Right side	Popliteal aneurism	3 days	
64	Physick	Male			Varicose aneurism below the knee	12 years	
65	Roberts	Male	32		Popliteal aneurism		In 24 hours removed
66	Dupuytren	Male			Diffused aneurism upper part of leg from gun shot	1 month	20th day
67	Monteath	Male			Popliteal aneurism		30th day
68	Dupuytren	Male	39	Right side	Pulsating tumour of head of tibia		15th day
69	Janson	Male	49		Popliteal aneurism		11th day
70	Adam	Male	30	Left side	Popliteal aneurism	2 months	19th and 21st days*
71	Liston	Male	35	Right side	Popliteal aneurism	3 weeks	22d day
72	Liston	Male	30	Left side	Popliteal aneurism	12 months	17th day
73	Carmichael	Male	40	Right side	Popliteal aneurism		
74	At Meath Hospital	Male			Popliteal aneurism		
75	Todd	Male	30	Right side	Popliteal aneurism	4 months	18th and 19th days*
76	Todd	Male	27	Left side	Popliteal aneurism	2 months	18th day
77	Perry	Male	45	Right side	Femoral aneurism	1 month	

* Double ligature.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
May 11th, 1807	Cured			Edin. Med. & Surg. Journ., vol. iii.
Mar. 31st, 1808	Cured			Amer. Med. and Phil. Reg., vol. iii.
Jan. 3d, 1809	Cured			Leçons Orales, tom. iv.
July 5th, 1810	Cured			Cases, p. 9.
Sept. 24th, 1810	Cured			Practical Observations.
	Cured			do do
	Cured			do do
Feb. 19th, 1811	Cured			Cases.
Feb. 8th, 1813	Cured			do
Mar. 1st, 1813	Cured			Amer. Med. and Phil. Reg., vol. iii.
May 15th, 1813	Cured			do do do vol. iv.
June 17th, 1813	Cured			do do do vol. iv.
Oct. 8th, 1813	Cured			Edin. Med. & Surg. Journ., vol. xi.
Oct., 1813	Cured			Med.-Chirurg. Transactions, vol. vi.
	Died	23d day	Tetanus	Lond. Med. Repos., vol. i.
Feb. 27th, 1815	Cured			Med.-Chir. Trans., vol. vii.
Feb. 23d, 1816	Died	7th day	Hemorrhage	do do do vol. vii.
October 14th	Cured			do do do vol. vii.
Sept. 1st, 1817	Died		Gangrene of limb	Dub. Med. Journ., vol. viii.
Sept. 1st, 1817	Died	41st day	Thoracic inflammation and abscess in the course of the artery	Medico-Chirurgical Review, vol. xxiv.
Oct. 6th, 1817	Cured			Med.-Chir. Trans., vol. x.
June 6th, 1818	Cured			do do do vol. x.
Feb. 20th, 1818	Cured			Cases.
March 7th, 1818	Cured			Med.-Chir. Trans., vol. x.
	Died		Gangrene of limb and hemorrhage	Dorsey's Elements, vol. ii.
June 6th, 1818	Cured			Med-Chir. Trans., vol. xi.
1818	Cured			Leçons Orales, tom. iv.
Feb. 27th, 1819	Cured			Cooper's Surg. Dictionary, 1838.
Mar. 16th, 1819	Cured			Répertoire d'Anat., tom. ii.
July, 1818	Cured			Mélanges de Chirurgie.
April 3d, 1819	Cured			Edin. Med. & Surg. Journ., vol. xviii.
Oct. 1st, 1819	Cured			do do do vol. xvi.
Oct. 5th, 1819	Cured			do do do vol. xvi.
May 25th, 1818	Died	19th day	Phlebitis	Transacts. Coll. of Phys. of Ireland, vol. ii.
1819	Died		Hemorrhage	do do do vol. ii.
Sept. 1st, 1820	Cured			Dub. Hosp. Reports, vol. iii.
Sept. 1st, 1820	Cured			do do do vol. iii.
Jan. 20th, 1821	Cured			Glasgow Medical Journal, vol. iv.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
78	Gunning	Male	47		Popliteal aneurism	6 weeks	17th day
79	Travers	Male	25	Left side	Popliteal aneurism	7 weeks	19th day
80	Travers	Male	25	Right side	Popliteal aneurism		13th day
81	Travers	Male	31		Popliteal aneurism	2 weeks	18th day
82	Liston	Male	35		Femoral aneurism		
83	A. Cooper	Male	47	Left side	Popliteal aneurism		42d day
84	Travers	Male	32		Popliteal aneurism		
85	Liston	Male	43		Popliteal aneurism	2 months	
86	D. L. Rogers	Male	30		Wound of knee-joint		15th day*
87	Stephenson	Female	90	Left side	Popliteal aneurism	2 months	18th day
88	Mott	Male	34		Compound dislocation of ankle		
89	Key	Male	30	Left side	Popliteal aneurism	6 weeks	
90	Uccelli	Male			Popliteal aneurism		
91	Travers	Male	37		Femoro-popliteal aneurism		
92	Benja	Male	50	Left side	Popliteal aneurism	6 months	24th day*
93	Arnott	Male	34	Left side	Popliteal aneurism	4 months	31st day
94	Dupuytren	Male	22		Varicose aneurism of thigh	6 months	
95	C. Bell	Male	45	Left side	Popliteal aneurism	4 years	
96	Baynham	Male	20		Varicose aneurism of thigh and aneurismal varix near the ankle	3 years	11th day
97	Macfarlane	Male	45	Left side	Popliteal aneurism	7 months	12th day
98	Macfarlane	Male	45	Right side	Popliteal aneurism		
99	Macfarlane	Male	36	Left side	Popliteal aneurism	3 weeks	19th day
100	Macfarlane	Male	42	Left side	Popliteal aneurism	5 weeks	26th day
101	Wright	Male	38	Right side	Popliteal aneurism	1 year	45th day
102	Macfarlane	Male	38	Right side	Aneurism of anterior tibial and popliteal		
103	Ehrmann	Male	43	Right side	Popliteal aneurism	9 months	22d day
104	Lallemand	Male	45	Right side	Pulsating tumour of head of tibia		36th day
105	Dickinson	Male		Right side	Wounded femoral		17th and 24th days*
106	Lisfranc	Male	23		Wounded femoral		10th and 11th days*
107	Carlisle	Male	46	Right side	Popliteal aneurism	2 months	
108	Dupuytren	Male	35		Popliteal aneurism		
109	Dupuytren	Male		Right side	Popliteal aneurism	4 months	17th day
110	Briggs	Male	30		Popliteal aneurism		21st day
111	Pierpont	Male	30		Femoral aneurism	5 weeks	
112	Guthrie	Male	26	Left side	Popliteal aneurism	2 months	17th day
113	Guthrie	Male	33	Left side	Popliteal aneurism	6 weeks	31st day
114	S. Cooper	Male	48	Left side	Popliteal aneurism	5 years	
115	Collis				Popliteal aneurism		17th day

* Double ligature.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
April 27th, 1821	Cured			Guthrie's Diseases of Arteries, 1830.
Nov. 22d, 1822	Cured			Lond. Med. & Phys. Journ., vol. iii., N. S.
April 11th, 1823	Cured			do do do vol. iii., N. S.
Feb. 24th, 1823	Cured			do do do vol. ii., N. S.
April 2d, 1823	Cured			Edin. Med. & Surg. Journ., vol. xxvii.
May 30th, 1823	Died	28th of July	Gangrene of limb	Lectures by Tyrrell.
	Died	4th day	Gangrene of limb	Lond. Med. & Phys. Journ., vol. iii., N. S.
Jan. 25th, 1824	Cured after amputation			Edin. Med. & Surg. Journ., vol. xxvii.
Aug. 4th, 1824	Cured			N. Y. Med. & Phys. Journ., vol. iii.
Aug. 18th, 1824	Cured			Lancet, vol. ii., 1827–28.
Sept. 2d, 1824	Died	7th day	Tetanus	N. Y. Med. & Phys. Journ., vol. iii.
Oct. 4th, 1824	Died	11th day	Gangrene of limb	Lancet, October, 1824.
	Died	26th day	Diarrhœa	Archives Générales, vol. v., 1824.
Jan. 21st, 1825	Died	3d day	Gangrene of limb	Lancet, January, 1825.
Aug. 21st, 1825	Cured			Lond. Med. & Phys. Journ., vol. lv.
Oct. 28th, 1825	Died	12 weeks after	Bursting of aneurism of aorta	do do do vol. lv.
May 17th, 1826	Died	8th day	Gangrene of limb	Méms. de l'Acad. Roy. de Méd., tom. iii.
Feb. 20th, 1826	Died	7th day		Lond. Med. & Phys. Journ., vol. i., N. S., 1826.
Mar. 10th, 1826	Cured			Midland Medical and Surg. Journ., vol. iii.
Mar. 29th, 1826	Cured			Surgical Reports, 1832.
May 14th, 1826	Died		Gangrene of limb	Surgical Reports.
June 2d, 1826	Died after amputation	August 12th	Gangrene of limb	do do
July 9th, 1826	Cured			do do
July 26th, 1826	Cured			Med. Repos., vol. vi., 1828.
Nov. 15th, 1826	Cured			Surgical Reports.
May 11th, 1827	Cured			Répert. d'Anatomie, tom. v.
April 4th	Cured			do do tom. ii.
Mar. 25th, 1828	Cured			Amer. Journ. of Med. Sci., vol. iv., 1829.
June 3d, 1828	Cured			Amer. Journ. of Med. Sci., vol. iv., 1829.
Aug. 9th, 1828	Died	Beginning of September	Gangrene of limb	Lancet, vol. i., 1828–29.
Feb. 20th, 1828	Died	27th day	Gangrene of limb	Lancet, vol. ii., 1828–29.
Feb. 16th, 1829	Died	26th day	Dry gangrene of limb	Med.-Chirurg. Review, vol. xi., N. S., 1829.
March 6th, 1829	Cured			Guthrie's Diseases of Arteries, 1830.
Oct. 4th, 1829	Cured after amputation			Midland Medical and Surg. Journ., vol. ii.
April 10th, 1830	Cured			Med.-Chir. Rev., vol. xiii.
May 15th, 1830	Cured			do do do vol. xiii
April, 1830	Cured after amputation			Med.-Chir. Trans., vol. xvi.
Jan. 22d, 1831	Cured			Cyclop. of Anat. & Physiol., vol. i., p. 236.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
116	Tyrrell	Male	58		Popliteal aneurism	6 weeks	58th day
117	Mayo	Female	54	Right side	Femoral aneurism	2 months	22d day
118	Moulinié	Male	49		Femoral aneurism	2 years	29th day
119	Syme	Male	25	Left side	Popliteal aneurism	3 weeks	
120	Macfarlane	Male	42		Secondary hemorrhage after amputation of leg		16th day
121	Green	Male	38	Right side	Aneurism of posterior tibial	1 year	39th day
122	Collis	Male	30	Left side	Popliteal aneurism	2 months	
123	Morrison	Male	37	Right side	Femoral aneurism		17th day
124	Morrison	Male	26	Right side	Popliteal aneurism		17th day
125	Collis	Male	38	Right side	Popliteal aneurism	15 years	17th day
126	Collis	Male	38	Left side	Popliteal aneurism	15 years	27th day
127	B. Cooper	Male	41		Comp. fract. femur with rupture of femoral artery		16th day
128	Breschet	Male	32	Right side	Popliteal aneurism		19th day
129	N. R. Smith	Male	30	Left side	Popliteal aneurism	6 months	
130	N. R. Smith	Male	31	Right side	Femoral aneurism		
131	Travers	Male	45		Popliteal aneurism		
132	Barry	Male	44		Popliteal aneurism	2 years	60th day
133	Hayward	Male	28		Popliteal aneurism	3 weeks	16th day
134	Key	Male	36	Right side	Popliteal aneurism	3 months	46th day
135	Key	Male	26	Left side	Popliteal aneurism	5 weeks	28th day
136	Perry	Male	47	Left side	Varicose aneurism of femoral	4 years	
137	At Meath Hospital	Male			Popliteal aneurism		
138	Englehardt	Male	19		Supposed popliteal aneurism	3 weeks	
139	Morrison	Male	33	Left side	Popliteal aneurism		17th day
140	Syme	Male	39	Left side	Popliteal aneurism	4 months	19th day
141	Klingsohr	Male	39		Femoral aneurism		14th day
142	B. Cooper	Male	28	Right side	Popliteal aneurism	2 weeks	11th day
143	Syme	Male	51		Popliteal aneurism	3 months	19th day
144	Busk	Male	37	Left side	Popliteal aneurism	5 weeks	
145	Turner				Popliteal aneurism		
146	Bougard	Male	35		Popliteal aneurism	5 months	
147	Morrison	Male	42	Right side	Popliteal aneurism	12 months	29th day
148	Harris	Male	30	Left side	Varicose aneurism of femoral	15 months	Removed on 22d day
149	Auchinloss	Male		Left side	Popliteal aneurism	2 months	16th day
150	Blandin	Male	29	Right side	Popliteal aneurism		19th day
151	Norris	Male	32	Left side	Pulsating tumour of head of tibia	6 months	17th day
152	Phillips	Male	46	Left side	Popliteal aneurism	20 days	19th day

Date of operation.	Result.	Period of death.	Cause of death.	Work.
Feb. 25th, 1831	Cured			Med.-Chir. Rev., vol. xvi.
May 20th, 1831	Cured			Lond. Med. & Phys. Journ., vol. xi., 1831.
Aug. 23d, 1831	Cured			Journal Hebdomadaire.
Aug. 30th, 1831	Cured			Edin. Monthly Journ., vol. for 1842.
Dec. 19th, 1831	Cured			Surgical Reports, p. 279.
Sept. 21st, 1832	Cured			South's Trans. of Chelius, vol. ii.
Nov. 12th, 1832	Cured			Dub. Med. Journ., vol. v.
Dec. 13th, 1832	Cured			Amer. Journ. of Med. Sci., vol. xix.
Jan. 30th, 1833	Cured			do do do vol. xix.
Nov. 10th, 1833	Cured			Dub. Med. Journ., vol. v.
Dec. 14th, 1833	Cured			do do do vol. v.
February 9th	Cured			Surgical Cases.
February 18th	Died	28th day	Gangrene of limb	Méms. de l'Acad. Roy. de Méd., tom. iii.
August, 1834	Cured			Baltimore Med. and Surg. Journ., vol. ii.
March 4th, 1835	Cured			N. A. Archives of Med. and Surg., vol. ii.
Sept. 5th, 1834	Cured after amputation			On Constitutional Irritation, 1835.
Mar. 27th, 1834	Cured			Lancet, vol. i., 1834–35.
Dec. 27th, 1834	Cured			Boston Med. & Surg. Journ., vol. xii., 1835.
May 26th, 1835	Cured			Guy's Hospital Reports, vol. i.
Oct. 6th, 1835	Cured			do do do vol. i.
Sept. 10th, 1835	Died	6th day	Hemorrhage	Med.-Chir. Trans., vol. xx.
	Died	16th day	Phlebitis	Porter in Cyclop. of Anat., vol. i.
	Died			Gazette Médicale, 1835.
Mar. 23d, 1836	Cured			Amer. Journ. of Med. Sci., vol. xix.
May 9th, 1836	Cured			Edin. Med. & Surg. Journ., vol. xlvi.
July 15th	Cured			Archives Générales, tom. xliv.
July 20th, 1836	Cured			Guy's Hosp. Reports, vol. i.
July 22d, 1836	Cured			Edin. Med. & Surg. Journ., vol. xlvi.
July 24th, 1836	Cured			Lond. Med. Gaz., vol. xix.
	Died after amputation		Gangrene	Edin. Med. & Surg. Journ., vol. xlvi.
1836	Cured			Gaz. Médicale, No. 15, 1844.
Jan. 15th, 1837	Cured			Amer. Journ. of Med. Sci., vol. xxii.
July 11th, 1837	Died	1 month after	Gangrene of limb and hemorrhage	Amer. Journ. of Med. Sci., vol. i., N. S., 1841.
Oct. 8th, 1837	Cured			Lond. Med. Gazette, vol. i., 1842–43.
May 24th, 1838	Cured			Gazette des Hôpitaux, No. 98, 1838.
Sept. 22d, 1838	Cured			Amer. Journ. of Med. Sci., vol. xxv.
	Cured			Lond. Med. Gazette, vol. i., 1838–39.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
153	Shipman	Male	30		Popliteal aneurism	2 months	20th day
154	Lawrie	Female	23	Left side	Popliteal aneurism	5 months	15th day
155	Lenoir	Male	37	Right side	Popliteal aneurism		17th day
156	Lenoir	Male	49	Left side	Popliteal aneurism	6 months	
157	Bullock	Male	41		Popliteal aneurism	6 months	24th day
158	Syme	Male	26	Left side	Popliteal aneurism	3 months	25th day
159	Lawrie	Male	22	Left side	Popliteal aneurism	2 years	15th day
160	Syme	Male	29	Right side	Popliteal aneurism	1 month	
161		Male			Popliteal aneurism		
162	B. Cooper	Male	33	Right side	Popliteal aneurism	5 weeks	23d day
163	B. Cooper	Male	55	Left side	Popliteal aneurism	18 weeks	23d day
164	B. Cooper	Male	28	Left side	Popliteal aneurism	3 months	
165	Lawrie	Male	31	Right side	Popliteal aneurism	2 months	15th day
166	Syme	Male	33	Right side	Popliteal aneurism	1 month	38th day
167	Gutteriez	Male	25	Left side	Femoral aneurism		18th day
168	Gutteriez	Male	25	Right side	Popliteal aneurism		23d day
169	Syme	Male	17	Left side	Femoral aneurism from wound	3 months	18th day
170	Lizars	Male	46	Left side	Popliteal aneurism	5 months	35th day
171	Syme	Male	62		Hemorrhage after fractured leg		38th day
172	Teale	Male	30	Right side	Popliteal aneurism	1 month	17th day
173	Quain	Male	50	Left side	Popliteal aneurism	18 months	31st day
174	Syme	Male	25	Left side	Popliteal aneurism	3 weeks	37th day
175	Laugier	Male	50		Popliteal aneurism	3 weeks	18th day
176	Quain	Male	35	Left side	Popliteal aneurism	5 weeks	17th day
177	Adams	Male	28		Popliteal aneurism		10th day
178	Mackenzie	Male	18		Hemorrhage		
179	Syme	Male	42	Right side	Popliteal aneurism	6 weeks	25th day
180	Fox	Male	12		Aneurism of anterior tibial from wound	Some weeks	21st day
181	Phillips	Male	53	Right side	Popliteal aneurism	3 weeks	9th day
182	Lawrie	Male	31	Right side	Popliteal aneurism	10 months	
183	Lawrie	Male	30	Right side	Popliteal aneurism		10th day
184	Harrison	Male	42	Right side	Popliteal aneurism		20th day
185	Syme	Male	9		Popliteal aneurism	2 years	14th day
186	Nottingham	Male	43	Right side	Popliteal aneurism	7 months	24th day
187	Nelaton	Male			Pulsating tumour of intern. condyle of femur		
188	Syme	Male	32	Left side	Popliteal aneurism	5 months	21st day
189	Syme	Male	32	Right side	Popliteal aneurism		
190	Hancock	Male		Left side	Popliteal aneurism	10 weeks	15th day
191	A. E. Hosack	Male	55		Popliteal aneurism		26th day
192	Norris	Male	35	Left side	Popliteal aneurism	6 months	26th day

Date of operation.	Result.	Period of death.	Cause of death.	Work.
June 18th, 1839	Cured			Boston Med. & Surg. Journ., vol. xxiv.
Sept. 22d, 1839	Cured			Lond. Med. Gazette, vol. i., 1842–43.
Oct. 3d, 1839	Cured			Archives Générales, tom. i., 4e série.
1839	Cured			do do tom. i., 4e série.
Oct. 30th, 1839	Cured			Lond. Med. Gazette, vol. ii., 1840.
Dec. 3d, 1839	Cured			Lond. and Edin. Monthly Journ., vol. i.
April 1st, 1840	Cured			Lond. Med. Gazette, vol. i., 1842–43.
April 30th, 1840	Cured			Lond. und Edin. Monthly Journ., vol. i.
July 4th, 1840	Died	15th day	Phlebitis	Porter on Aneurism.
Sept. 8th, 1840	Cured			Guy's Hosp. Reports, vol. vi.
Oct. 6th, 1840	Cured			do do do vol. vi.
Dec. 26th, 1840	Cured			do do do vol. vi.
Nov. 24th, 1840	Cured			Lond. Med. Gazette, vol. i., 1842–43.
Feb. 17th, 1841	Cured			Lond. and Edin. Monthly Journ., vol. ii.
Mar. 4th, 1841	Cured			Annales de Chirurg., tom. iv.
Mar. 26th, 1841	Cured			do do do tom. iv.
May 26th, 1841	Cured			Lond. and Edin. Monthly Journ., vol. ii. 1842.
May 28th, 1841	Cured			do do do vol. i., 1841.
June 2d, 1841	Cured			Edin. Monthly Journ., vol. for 1842.
Aug. 4th, 1841	Cured			Lond. Med. Gazette.
Aug. 12th, 1841	Cured			Lancet, vol. i., 1841–42.
Aug. 30th, 1841	Cured			Lond. and Edin. monthly Journ., vol. ii., 1842.
Sept. 23d, 1841	Cured			Annales de Chirurg., tom. vi.
Oct. 17th, 1841	Cured			Lancet, vol. ii., 1841.
1841	Died		Gangrene	Dub. Med. Journ., vol. xix.
Mar. 31st, 1842	Died	In 24 hours		Liston on a Variety of False Aneurism, 1842.
July 19th, 1842	Cured			Lond. and Edin. Monthly Journ., vol. ii., 1842.
Sept. 17th, 1842	Cured			Amer. Journ. of Med. Sci., vol. v., N. S., 1843.
1842	Died	43d day	Gangrene of limb	Lond. Med. Gazette, vol. i., 1842.
July 13th	Cured after amputation			do do do vol. i., 1843.
	Died after amputation		Gangrene of limb	do do do vol. i., 1843.
Nov. 1st, 1843	Cured			do do do Oct., 1845.
Feb. 24th, 1844	Cured			Lond. and Edin. Monthly Journ. for 1844.
Oct. 14th, 1844	Cured			Guy's Hosp. Reports, Oct., 1845.
Mar. 10th, 1845	Cured			Lancet, vol. i., 1845.
Sept. 17th, 1845	Cured			Monthly Journ. of Med. Sci., 1846.
Nov. 26th, 1845	Cured			do do do 1846.
Sept. 6th, 1845	Cured			Lancet, vol. ii., 1845.
March, 1846	Cured			N. Y. Journ. of Med. & Coll. Sci., vol. i., N. S., 1848.
April 22d, 1846	Cured			At Pennsylvania Hospital.

No.	Surgeon.	Sex.	Age.	Right or left side.	Disease or injury.	Duration of disease.	Ligature separated.
193	Cheesman	Male	25		Wounded anter. tibial and interosseal arteries		
194	Syme	Male	42	Right side	Popliteal aneurism	2 months	36th day
195	Toogood	Male	36		Popliteal aneurism	1 year	11th day
196	Sabine	Female	40	Right side	Popliteal aneurism		
197	C. B. Gibson	Male	45	Right side	Femoral aneurism		18th day
198	Judd	Male	32	Right side	Popliteal aneurism		
199	B. Cooper	Male	30	Left side	Popliteal aneurism		22d day
200	Roux	Male	58	Right side	Popliteal aneurism		
201	Bird	Male	38	Right side	Popliteal aneurism	2 years	13th day
202	Bird	Male	38	Left side	Popliteal aneurism	"A few weeks"	7 weeks
203	Roux	Male	45	Left side	Popliteal aneurism	7 months	
204	Wright	Male	37		Popliteal aneurism	6 days	26th day

Mortality.—The foregoing Table contains a list of two hundred and four cases in which the femoral artery has been ligatured by the Hunterian method. Of these, one hundred and fifty-four recovered, and fifty died. Six of the patients who recovered undergoing amputation in consequence of gangrene of the limbs.

Disease or Injury.—Of the whole number of cases contained in the tables, the artery was tied in one hundred and fifty-five, for the cure of popliteal aneurisms; in twenty-two, for femoral aneurisms; in six, for aneurismal tumours of the leg; in four, for pulsating tumours of the head of the tibia or condyle of the femur; in five, for varicose aneurisms; in three, for rupture of the artery, accompanying fractures of the leg or thigh; in eight, in order either to prevent or abate inflammation after wounds and dislocations, or to arrest hemorrhage, either primary or secondary; and in one, for a supposed popliteal aneurism.

Of the one hundred and eighty-eight cases in which the operation was done for the cure of aneurisms, one hundred and forty-two were cured, and forty-six died.

Sex.—Of one hundred and eighty-three cases of aneurisms, in which this is noted, one hundred and seventy-seven occurred in males, and six in females.

Right or Left Side.—Of one hundred and twenty-four cases of aneurisms where the side is mentioned, sixty-three were on the right, and sixty-one on the left side.

Age.—The age is noted in one hundred and sixty-four cases of aneurisms, and of these, there were:—

Under 10 years	1 a true aneurism	Between 40 and 50	40 a true aneurism
Between 10 and 20	4	" 50 and 60	14
" 20 and 30	30	60, and above it,	3*
" 30 and 40	72	Total	164

---

* One of these was a female, aged ninety, who is stated to have been living and well three years after the operation was performed.

Date of operation.	Result.	Period of death.	Cause of death.	Work.
July 7th, 1846	Died	25th day	Phlebitis	Annalist, vol. i., 1846.
Oct. 2d, 1846	Cured			Month. Journ. of Med. Sci., 1846–47.
Mar. 1st, 1847	Cured after amputation			do do do 1846–47.
Mar. 15th, 1847	Died	9th day		Annalist, vol. i.
July, 1847	Cured			Amer. Journ. of Med. Sci., vol. xiv., N. S., 1847.
Nov. 1st, 1847	Died	14th day	Tetanus	Lond. Med. Gazette, vol. v., 1847.
Mar. 18th, 1837	Cured			Guy's Hosp. Reports, vol. ii.
July 31st, 1840	Died	19th day	Phlebitis	L'Expérience, tom. vi.
Jan. 7th, 1837	Cured			Lancet, vol. i., 1837–38.
Mar. 7th, 1837	Cured			do vol. i., 1837–38.
June 13th, 1835	Died after amputation		Gangrene	Thèse of Figuière, 1845.
1848	Cured			Lancet, vol. i., 1849.

Period the Ligature separated.—In one hundred and thirty-seven cases* in which the ligature separated spontaneously, it came away in ninety-one before the twentieth day; in thirty-seven, between the twentieth and thirtieth days; in fourteen, between the thirtieth and fortieth days; and in five, beyond the fortieth day. The longest period to which it remained was the sixtieth day, and the shortest the fifth day.

Return of Pulsation in the Aneurismal Tumour after the application of the Ligature.—This was observed in nineteen cases. In No. 23, a slight pulsation in the sac was observed on the day following the operation, on the next day it was more distinct, but two days afterwards it became much less. The patient recovered. In No. 25, some pulsation was observed in the tumour on the fourth day after the operation, and the patient died on the twelfth day of hemorrhage. In the third case, No. 60, pulsation appeared in the tumour on the day after the operation, but ceased on the sixteenth day, the patient recovering. In No. 67, nine months after recovery from the operation, the tumour, which had diminished so much as to have become barely perceptible, and was without pulsation, reappeared, and pulsation in it became distinct. The cure was finally completed by compression. In the fifth case, No. 78, the artery was ligatured April 27th, 1821. On the 20th of July, 1825, he was readmitted, and stated that the tumour had entirely disappeared soon after he was discharged in 1821, but that, five or six weeks before his readmission, he observed that its swelling had returned at the upper part of the ham, and was at that time nearly of the size of a hen's egg. It was proposed to take up the artery between the part tied in the former operation, and the aneurismal sac; but, as the first operation had not succeeded, the patient preferred amputation. He died, eight hours after it. The femoral was found to be obliterated, for the space of half an inch, at the part where the ligature had been applied four years before. Immediately below it, two small branches were observed to enter the continued trunk of that vessel. These were equal to half the diameter of the femoral vessel. The anastomosing branches given off above the obliterated portion were a good deal enlarged. In No. 82, the disease was a femoral aneurism, and the artery was tied in April, 1823. On the 25th of January following, he had a return of pulsation in the tumour, which disappeared under the application of cold and compression. In No. 95, all pulsation in the tumour ceased upon tightening the ligature, but returned in a few minutes. In half an hour after the operation it was nearly as distinct as before the artery was tied, but on the third day the pulsation ceased. The patient died; and on dissection, the femoral artery, just below the part where the profunda was given off, was found to be divided into two nearly equal branches. These ran down parallel to each other, to the part where the artery passes through the tendon of the triceps muscle, when they again united. The ligature had been placed on the most superficial vessel.* In the eighth case, No. 96, which was one of varicose aneurism at the middle of the thigh, with an aneurismal varix near the ankle, pulsation was observed in the varix at the ankle on the fourth day; the patient recovered, but was not cured. In the year after the operation, the tumour was stationary with the same pulsation. In No. 102, aneurismal tumours existed in both the anterior tibial and popliteal arteries: pulsation returned in both on the twelfth day, but ceased four days afterwards, and the patient was cured. In No. 110, the operation was done in March, 1829; pulsation ceased after it, and the tumour diminished in size. He returned to work, and it ultimately entirely disappeared. In the month of September following, the tumour reappeared with pulsation. By the application of a hard compress on the inner part of the thigh, which he wore for two months, night and day, the pulsation ceased, and one year after the operation no appearance of swelling was to be perceived. In No. 134, pulsation in the sac returned the day after the operation, but rapidly disappeared. In No. 136, the disease was a varicose aneurism of the femoral. Four hours after the operation, feeble pulsation was noticed in the tumour, and on the following day become stronger. The patient died. In No. 144, the operation was done on the 24th of July; on the 31st, indistinct pulsation was observed in the tumour. By the 7th of August it had increased, and is afterwards noticed as present on the 15th and 25th. By the 4th of September it was free from all pulsation. In the fourteenth case, No. 155, pulsation was noticed in the tumour five months after the operation, though it was small and hard; the sac afterwards suppurated, and the case did well. In No. 161, pulsation reappeared in the sac on the tenth day, and gradually increased in violence until the man began to sink. In No. 190, pulsation was noticed in the tumour on the eighth day, and on the twentieth was no longer perceptible. In the seventeenth case, No. 191, where the operation was performed in March, the pulsation and size of the tumour had returned to nearly its original size and force by the middle of August. Compression on the artery was employed, and at the end of five days removed. After a fortnight, a slight thrill being again detected in it, it was reapplied for thirty-six hours, and a perfect cure effected. In No. 199, the patient had been operated upon, on the same side, six months previously, by Mr. Greaves, of Manchester. Pulsation returned in the sac twelve hours after it, and the disease was not cured. Upon close examination in the course of the cicatrix, the pulsation of a vessel was discovered, though certainly not of a natural sized artery, nor did any degree of pressure upon this command the pulsations of the aneurismal tumour. In the lower third of the thigh the pulsation of the artery was very perceptible, and pressure here immediately stopped the flow of blood into the tumour. Mr. Cooper believed that the cause of failure of the operation which had been done, was owing, probably, to a high division of the femoral artery into two branches, and tied the vessel low down in the thigh. Immediately upon tightening the ligature, the pulsation in the tumour ceased, but in a few minutes became again as distinct as before the operation. A slight degree of compression was made over the sac. On the following day the pulsation was less perceptible, and two days afterwards it had entirely ceased. During the ten following days the sac had become firm. In the nineteenth case, No. 200, the patient had been operated upon for a popliteal aneurism of the opposite side, three years previously, and was apparently cured, but when he presented himself for the second operation, a pulsating tumour of the size of a hen's egg was found in the ham. Upon examination of the femoral artery of this side, after the death of the patient, it was found to be obliterated for the space of two inches.

---

* In some of the cases a double ligature was used.

---

* I have seen it stated that preparations, showing a similar distribution, exist in the Royal College of Surgeons at Dublin, and in St. Bartholomew's Hospital at London.

In addition to these cases, an instance is mentioned by Sir A. Cooper, where an operation for popliteal aneurism was done by Mr. Key, and the disease apparently cured, but a year afterwards the patient returned to Guy's Hospital with the aneurismal tumour nearly of its original size, and he amputated the limb.

Hemorrhage after the Operation.—This occurred in twenty-four cases, of which twelve died and twelve were cured, one of the latter being with the loss of the limb. In No. 2, there was hemorrhage from the wound on the nineteenth and twentieth days after the operation, on the last occurrence of which the artery "was tied a little higher up." On the twenty-sixth day it recurred, and the patient died. In No. 7, death took place from hemorrhage on the eleventh day. In No. 23, the operation was done on the 14th of July. On the 24th there was slight hemorrhage from the wound, and on the 26th a return of it, which was arrested by compression. On the 6th of August, there was another bleeding, which was again arrested by pressure, and the case did well. In No. 25, bleeding had taken place on the eleventh day, and returned violently on the twelfth, and carried off the patient. In No. 29, hemorrhage took place on the forty-second day after the operation; it again occurred on the following morning, and an hour afterwards the man died. In No. 34, there was bleeding from the wound on the fifth day after the ligature separated, and the patient did well. In No. 111, there was hemorrhage on the fifteenth day, when the limb was amputated, and the patient recovered. In No. 38, the patient died from hemorrhage on the twenty-seventh day. In No. 40, there was bleeding on the twenty-third day; this recurred on the twenty-fourth, when the wound was enlarged and stuffed with lint. The patient was cured. In No. 56, an attempt to remove the ligature was made three days after the operation; two days subsequent to this, in consequence of loss of blood, a second ligature was placed higher up on the artery, and within a few days there was another gush, and the man died. In Nos. 64 and 74, death also took place from hemorrhage. In No. 68, there was hemorrhage from the wound on the sixteenth day, and a recurrence of it on the twenty-second, but the patient recovered. In No. 71, there was some hemorrhage eight days after the separation of the ligature, but it did not again recur, and the patient did well. In No. 92, a small non-pulsating tumour was observed, soon after the operation, about the middle of the wound, and the same night an alarming loss of blood from the part took place; the artery was now again secured higher up, and the patient recovered. In No. 100, there was hemorrhage to eight ounces on the nineteenth day, and no bad result followed. In No. 96, hemorrhage took place on the separation of the ligature, on the eleventh day, to the amount of a pint and a half, and the patient recovered. In No. 107, there was slight hemorrhage from the wound on the seventh day, and the patient afterwards died of gangrene of the limb. In No. 122, a cure took place, despite copious hemorrhages on the eighth and thirteenth days. In No. 136, bleeding to a large amount took place on the fifth day, and on the following one it recurred, and he died. In No. 129, there was slight hemorrhage on the twelfth day from around the ligature; this returned on the same evening, and a tumour was observed at the point of the ligature which pulsated, and had attained the size of an orange. On the following day hemorrhage again had place, when the artery was tied above the profunda, and the tumour on the thigh laid open. On the eighth day following this, there was another profuse bleeding, which was arrested by compresses and a bandage, and the patient recovered. In No. 130, which was a femoral aneurism, a popliteal tumour of the size of an orange had existed in the same limb, in which a spontaneous cure had taken place after the formation of that in the thigh. The ligature was applied just below Poupart's ligament. On the eleventh day after the operation, hemorrhage to the amount of two pounds took place from the wound, which was stopped by compresses and a spica bandage. On the thirteenth, fifteenth, and seventeenth days, there were returns of the bleeding, but the patient recovered. In No. 193, the femoral was secured, July 7th, on account of a wound of the anterior tibial and interosseal arteries. On the 22d, there was hemorrhage to the extent of thirty-three ounces from the seat of operation, which was arrested by the application of cold and a tourniquet. On the 24th, in consequence of a renewal of it, the external iliac was tied. On the 26th, there was another alarming hemorrhage, when the saphena vein and a branch of the profunda were taken up. The patient died September 1st. In No. 200, there was a slight hemorrhage previous to death on the nineteenth day.

Suppuration of the Sac.—This occurred, after the operation for aneurism, in sixteen cases; and of these, six died and ten did well. In No. 3, it is stated that the sac opened after the operation, but healed up like any other sore. In No. 19, on the fifth day after the operation, fluctuation became evident and the tumour was laid open. The patient died. In No. 7, fluctuation in the sac was noticed on the ninth day, and on the eleventh it burst, and the patient died of hemorrhage. In No. 26, at the end of a month, fluctuation was perceived in the tumour, and it was laid open. The patient died. In No. 31, the sac opened and discharged during the cure. In No. 38, an eschar formed on the tumour, after the operation, which discharged fetid matter. Warm milk and water was thrown into the sac, and on the same evening there was profuse hemorrhage from it. To arrest this, amputation of the limb was done, soon after which the patient died. In No. 52, the tumour sloughed, one month after the ligature, and the patient recovered. In No. 53, the operation was done in October, 1813, and in the autumn of the following year the sac suppurated, was opened, and cicatrized. In No. 69, the tumour suppurated and was opened, on the fifteenth day after the operation, and the patient recovered. In No. 73, on the seventh day after the ligature of the vessel, the integuments covering the tumour were mortified, and an opening into it was made and its contents set free. The patient died. In No. 81, the skin over the sac, which was gangrenous at the time of the operation, sloughed on the fourth day. In No. 92, there was suppuration of the sac, which was opened and the patient cured. In No. 111, the tumour, which had been punctured before the artery was tied, afterwards suppurated and discharged. The man was cured after amputation. In No. 155, the sac suppurated more than five months after the operation, when an incision was made into it and the patient cured. In No. 160, the tumour suppurated and discharged itself, and the patient recovered. In No. 181, heat of tumour was observed on the eighth day after the application of the ligature; three days after this fluctuation was evident, and an exit was given to the pus. The patient died.

Gangrene of the Limb.—This followed in thirty-one out of the two hundred and four cases contained in the tables, and it in no case occurred except where the operation was done for aneurisms. Of these thirty-one cases, Nos. 12, 19, 35, 58, 64, 83, 84, 89, 91, 94, 107, 108, 109, 128, 177, and 181, sunk at various periods after the operation. In No. 16, the last phalanges of the toes sloughed, as also a spot on the inferior part of the leg, and a portion of the fifth metatarsal bone exfoliated. The patient recovered. In No. 36, the operation was done on the 24th of July; mortification followed on the third day after it; amputation was done on the 16th of August, six days after which the patient died. In No. 85, the artery was tied on the 25th of January. On the 30th, symptoms of gangrene set in, and on the first of February, the thigh was successfully amputated immediately below where the artery was tied. The gangrene in this case is stated to have been caused by the employment of fomentations of hot salt, notwithstanding strict injunctions to the contrary. In Nos. 97 and 98, the patient had aneurismal tumours in both hams; the left artery was first tied, and gangrene of the foot followed it. The ligature on the right limb was done at the request of the patient; gangrene occurred in it also, and death followed. In No. 99, mortification took place on the ninth day; the limb was amputated on the thirty-fourth day, and the man died. In No. 114, the limb is stated to have been threatened with gangrene before the vessel was tied—it followed the operation, and the man was cured after amputation. In No. 131, the ligature was applied on the 5th of September; profuse hemorrhage occurred on opening the sheath of the vessels. Gangrene immediately followed. Amputation above the knee was done on the 18th, and the patient recovered. In No. 145, amputation was done a week after the operation, in consequence of mortification, and was followed by death. In No. 148, the operation was followed by gangrene of the limb, and the thigh was removed unsuccessfully. In No. 182, gangrene appeared on the third day; amputation was done, after a line of demarcation was formed, and the patient recovered. In No. 183, the limb was amputated on the 22d day, and was followed by death in three hours. In No. 195, the tumour had burst previous to the operation, which was done on the 1st of March; gangrene of the foot and leg followed, and on the 8th the thigh was amputated, and the patient got well. In No. 198, symptoms of mortification appeared on the third day, after which trismus set in and the man died. In No. 203, the operation was followed by gangrene of the foot and leg. The thigh was amputated during its progress, seven days after which death occurred from gangrene of the stump.

Cause of Death.—Of the two hundred and four cases contained in the tables, fifty died. Of these, twenty-three died from mortification of the limb; eight from hemorrhage; five from phlebitis; three from tetanus; two from hectic and diarrhœa; one from thoracic inflammation and abscess in the course of the artery; one from sloughing of the sac; one from the bursting of an aneurism of the aorta within the pericardium twelve weeks after the operation; one from fever; one from absorption of pus; and in four the cause is not noted.

Mistakes in Diagnosis.—In four of the cases included in the tables, mistakes in diagnosis occurred. In No. 83, the precise nature of the tumour could not be ascertained, and it was punctured before the operation. In No. 111, the tumour was mistaken for an abscess, and opened a week previous to the operation; after bleeding three pints it ceased spontaneously. In No. 138, the tumour was of the size of a goose's egg, distinctly pulsated, and was said to have shown itself suddenly, while walking, three weeks previously. Compression was at first attempted, and afterwards the artery was tied, notwithstanding which the swelling continued to increase. On post-mortem examination, it was found to consist partly of a fibrous tissue divided into lobes, and in part of a soft substance containing cells filled with a serous fluid. The artery ran over the tumour between two of the sacs, and through these its pulsations had been so communicated as to give the sensation of the whole tumour pulsating. The right lung was converted into a brain-like mass. In No. 196, the patient was a black woman, in whom there existed great swelling of the whole limb, but particularly of the popliteal region. Suspecting deep suppuration, an incision, an inch in length, was made into it, from which nothing but a little serum, slightly coloured with blood, escaped. The integuments in the popliteal region afterwards ulcerated, and some days subsequently there was a profuse hemorrhage from the part when the artery was tied.

Two very instructive cases of mistake in the diagnosis of popliteal tumours have been published by Mr. Lawrence, of London, which I will here take the liberty of referring to. The first (*Medico-Chirurgical Transactions*, vol. viii. p. 497) was that of a large aneurism filling up the whole ham, and extending on both sides of the femur towards the front of the limb. It had begun behind, and had existed for five months; had a firm, fleshy feel, being a little softer at one of its anterior protuberances than in other parts; was not tender on handling, but gave the patient great pain. The surgeons of St. Bartholomew's, in consultation, viewing it as a large and rapidly increasing tumour, recommended amputation, which Mr. L. did, having first plunged a lancet into the softest part of the swelling, to the whole depth of the blade, without giving issue to any fluid. Examination of the amputated limb showed the tumour to be a popliteal aneurism, containing an immense mass of firm bloody coagulum, and, although the sac had been freely penetrated by the abscess lancet, no part of its contents escaped. The eminent surgeon who records this adds, that he "has stated the case to put others on their guard; and shall be happy if what he has said should, in any instance, prevent so serious a mutilation as that which his patient suffered."

The second case was that of a man, aged thirty, with a swollen and painful state of the right knee joint, consequent upon a fall. Shortly after, a swelling arose immediately above the knee, and gradually extended around the back part and sides of the thigh. Near the tendon of the triceps a softening of the swelling indicated the probability of its containing matter, and a small incision was made into it, from which about four ounces of arterial blood flowed. On examining the swelling more closely, pulsation in it was now discovered, and it was agreed that sufficient ground existed for believing the tumour to be a popliteal aneurism, and accordingly the femoral was tied. The pulsation immediately ceased, and its size gradually diminished; but, after some time, it again enlarged, became painful, the skin covering it sloughed, and the slough extended into the tumour, and the man shortly after died. The tumour was found to consist of a soft fibrous and dense osseous tissue—the latter originating from the femur. The femoral and popliteal vessels were sound.

Difficulties of, and Accidents during the Operation.—In eleven of the two hundred and four ligations of the femoral artery, the crural vein was either included in the ligature, or wounded in the operation. In Nos. 2 and 90, the vein as well as the artery was tied. In Nos. 13, 73, 94, 107, and 159, the vein was wounded in the operations. In No. 74, the ligature was found to have passed through the vein. In No. 131, profuse hemorrhage occurred on opening the sheath of the vessels. In No. 146, the vein was wounded during the operation; the patient recovered and lived four and a half years after it. On dissection, it was found to be obliterated to the extent of three inches. In No. 161, the vein was pricked in the operation, and a small portion of it included in the ligature along with the artery. It may be well here to mention that a case occurred to Sir A. Cooper, where the patient placed himself upon the table, for the purpose of undergoing ligature of the femoral vessel for a popliteal aneurism, and died before the first incisions were concluded, in consequence of the bursting of an aneurism of the aorta.

In the *Southern Journal of Medicine and Surgery*, for May, 1848, an interesting case of false aneurism in the thigh is related, in which an attempt was made to ligate the femoral artery at the crural arch. A ligature was passed around what was supposed, by all present, to be the artery, but on post-mortem examination it was found that it embraced a portion of a tendon, and that the femoral artery was not tied. The patient was so exhausted from previous hemorrhage, at the time of the operation, that no pulsation could be felt in either of the lower extremities.

Aneurisms on both Sides.—Of the cases of aneurism included in the tables, nine presented popliteal aneurisms on both sides. In Nos. 22 and 23, both aneurisms were observed when the patient presented himself to his surgeon. The left, at the time of the first operation, was small, and increased rapidly after the ligature of the first artery. In Nos. 60 and 61, the aneurism of the left side did not exist at the time of the operation upon the right. In Nos. 79 and 80, the tumour on the right side showed itself but a few weeks before the second operation. In Nos. 97 and 98, the aneurisms were both large, and of seven months' standing; the right artery was tied two months after that of the left. In Nos. 125 and 126, the aneurisms occurred simultaneously, and had existed for fifteen years. In Nos. 129 and 130, there was incipient disease of the right ham at the date of the operation upon the left. In Nos. 167 and 168, the second tumour did not make its appearance till after the cure of the first. In Nos. 188 and 189, the disease seemed to be beginning on the right side at the time of the first operation. In Nos. 201 and 202, the tumour in the left ham was noticed some time after that of the right side had been operated upon. No. 84 was also a subject of aneurism in each ham. In No. 197, the tumour in the ham was first observed about ten days after a ligature had been placed on the external iliac of the opposite side for the cure of a femoral aneurism. No. 20, had been the subject of popliteal aneurisms of both sides, and the left limb was amputated some time previous to the ligature of the vessel of the right side. In No. 200, also, the artery on the left side had been tied three years previously for a popliteal aneurism.

Pulsating Tumours of the Head of the Tibia, or Condyle of the Femur.—Four cases are included in the tables in which the femoral artery was ligatured for the cure of these affections. They all recovered; but in two of them, although cures appeared to follow, there were afterwards returns of the disease. In No. 68, the limb was amputated between three and four years after the ligature had been applied, the tumour having attained a great size. In another, which occurred to the writer, although the ligature of the vessel was apparently followed by a cure of the disease, the tumour returned, and, eleven months after it, I amputated the limb. In three of the cases in which the vessel was tied for these tumours (Nos. 68, 151, and 187), pulsation reappeared; in the first on the sixteenth day, but soon ceased; in the second on the seventeenth day, and ceased on the twenty-sixth day; and in the third on the seventh day.

Varicose Aneurisms.—The foregoing tables contain five cases of varicose aneurisms of the lower limb. Four of these proved fatal, and in one no benefit was received from the operation. In No. 64, where the disease was situated on the posterior tibial artery, death occurred from gangrene of the limb and hemorrhages. In No. 94, where the femoral was affected, the operation was soon followed by gangrene and death. In No. 96, the disease was situated in the middle of the thigh, and the ligature was placed as nearly as practicable to the sac. The case went on favourably till the separation of the ligature on the eleventh day, when the patient came near losing his life from hemorrhage, and was in no way benefited by the operation. The contents of the tumour never coagulated, nor did the tumour decrease, and in the following year it remained stationary, with as much pulsation as before. In No. 136, death soon followed the ligature of the artery, and, on dissection, the vessel was found to be enlarged nearly to the size of the aorta, with its coats so thin as to give it nearly the appearance of a vein. In No. 148, the artery was tied immediately below Poupart's ligament. It was followed by mortification of the limb, and the thigh was removed six inches below the hip joint. There was afterwards a return of the disease, and secondary hemorrhages terminated life.

In connection with the above instances of varicose aneurism, in which the femoral artery has been tied, it may be interesting to contrast their results with those in which either the external iliac has been secured, or other treatment has been adopted, for the same affection. In the case of Baroni, where the disease was seated in the inguinal region, and the external iliac was taken up, an incision was made into the sac on the forty-fifth day, in consequence of repeated bleedings, with the view of securing all the vessels. The hemorrhage was so frightful, that the patient was only saved from dying on the table by making strong compression, and death occurred eleven days after.

In Dr. Fleischer's patient, where the affection occupied the middle of the thigh, and an incision into the sac was made, the fatal result took place from like causes. In the history reported by Hennen, where the external iliac was tied, the affection being seated in the upper third of the thigh, gangrene and death speedily followed; and in the case of Dr. Morrison, ligature of the external iliac was also made, for a like affection seated at the same part, and death in a short time terminated the sufferings of the patient. In the instance reported by Lallemand, where the disease was seated above the middle of the thigh, and was of five years' continuance, the femoral artery was first tied a little below Poupart's ligament. On the sixth day, in consequence of hemorrhage, the external iliac was ligatured, and on the same evening the bleeding again recurred, and he died. In a case recently published by Dr. Mott, the disease occupied the upper part of the thigh, and had existed for two and a half years. A ligature was applied to the external iliac; gangrene supervened, and the man died on the sixth day.

Observation, however, shows that varicose aneurisms in the lower extremity, after a certain lapse of time, in several cases have become stationary; and instances are recorded in which the affection has continued for years, causing but little inconvenience. In 1820, a patient fell under the notice of M. Dupuytren, with a large varicose aneurism of the upper part of the thigh, which had continued for twelve years without injuring the health, or in any way interfering with the free use of the limb; and in the spring of 1835, a patient was in the wards of M. Velpeau, at La Charité, in whom a like affection, seated high up in the thigh, had existed for more than twenty years, without materially interfering with the use of his member. A few years since, I had an opportunity of examining, along with several other surgeons of this city, a case of long continuance, which inconvenienced, though it did not distress the patient. In face of these facts it is, in my opinion, no longer a question whether or not operative measures should be resorted to in the lower limb in the treatment of such cases. Sound surgery condemns it. The affection does not necessarily compromise life, or the free use of the member; and resort to the knife should not be had so long as the infirmity can be made at all bearable by the use of compresses, laced bandages, and other like means. If in any case an operation for varicose aneurism in the lower extremity is absolutely demanded, all reasoning, as well as experience on the subject, goes to show that no good result can be expected from the application of a ligature by Hunter's method.

The following is a summary of the reported cases of femoral and popliteal aneurisms which have been treated by pressure since 1842. They have, with two or three exceptions, been derived from Mr. Bellingham's Tract on Aneurism, and the Report on Surgery, contained in the first volume of the *Transactions of the American Medical Association.*

No.	Surgeon.	Sex.	Age.	Seat of aneurism.	Duration of disease.	Duration of compression.	Result.
1	Hutton	Male	30	Popliteal	10 days	28 days	Cured.
2	Cusack	Male	55	Popliteal	7 days	31 days	Cured.
3	Bellingham	Male	32	Popliteal	3 months	2 days	Cured.
4	Liston	Male	30	Femoral	2 months	56 days	Cured.
5	Harrison	Male	29	Popliteal	1 month	93 days	Cured.
6	Liston	Male	53	Femoral	2 months	30 days	Cured.
7	Bellingham	Male	33	Femoral	10 days	43 days	Cured.
8	Kirby	Male	28	Popliteal	3 months	53 days	Cured.
9	Allan	Male	32	Popliteal	3 weeks	57 days	Cured.
10	Greatrex	Male	27	Popliteal		21 days	Cured.
11	Cusack	Male	26	Popliteal	1 month	7 days	Cured.
12	Porter	Male	29	Popliteal	2 months	24 days	Cured.
13	Cusack		30	Popliteal		About 20 days	Died suddenly from disease of the heart 48 hours after pressure had been removed. All pulsation had ceased.
14	Porter	Male		Popliteal	9 months	20 days	Cured.
15	O'Ferral	Male	32	Popliteal	3 weeks	33 days	Cured.
16	Jolley	Male	38	Popliteal	4 months	40 days	Cured.
17	Macdonnell			Popliteal	6 months		Cured.
18	Dartnell	Male	38	Popliteal	3 weeks	7 days	Cured.
19	Mackern	Male	30	Femoral	9 months	36 days	Cured.
20	Stork	Male	32	Popliteal	7 or 8 months	91 days	Cured.
21	Stork	Male	24	Popliteal	2 months	22 days	Cured.
22	Cusack	Male	33	Popliteal	16 days	43 days	Cured.
23	Sunter	Male	43	Popliteal	6 weeks	Several days	Cured.
24	Bellingham	Male	38	Popliteal	8 months	Pulsation continuing some time after compression, a galvanic current was passed through the sac. Seven days after this he was seized with erysipelas, and died six days afterwards.	
25	St. Vincent's Hospital			Popliteal			Cured.
26	Armstrong*	Male	26	Popliteal		106 days	Cured.
27	Harrison	Male	42	Popliteal	Some months	A fortnight, when the operation was performed at the request of the patient.	
28	Humphrey	Male	31	Femoral	3 weeks	2 days	Cured.
29	Buck			Femoral		Fairly tried	Failure, and the operation performed.
30	Rodgers	Male	47	Popliteal	2 months	31 days	Cured.
31	Watson	Female	38	Femoral	1 month	70 hours	Cured.
32	Mütter	Male	41	Popliteal	6 weeks	54 days	Cured.
33	Knight†	Male	48	Popliteal	Several months	40 hours	Cured.
34	Hosack	Male	55	Popliteal		5 days. After a fortnight, a slight thrill being detected in the tumour, it was reapplied for 36 hours.	Cured.
35	Tufnell	Male	27	Popliteal	4 months	9 days	Cured.
36	Tufnell	Male	28	Popliteal	A few days	46 days	Cured.
37	Hutton	Male		Popliteal	2 months	7½ hours, and after an interval of a week 3 hours longer.	Cured.

---

* In this case, pressure was made upon the tumour, not upon the artery above it.
† In this case, manual pressure, by relays of assistants, alone was used.

Art. II.—*Case of Successful Extirpation of a Fibrous Tumour of the Right Ovary by the large Peritoneal Section.* By Washington L. Atlee, M. D., Professor of Medical Chemistry in the Medical Department of Pennsylvania College, Philadelphia, Penn. (With two wood cuts.)

September 17*th*, 1848. I was called upon to visit Mrs. E. K———, of Philadelphia, for the purpose of examining a large abdominal tumour. Before engaging in the examination, the patient gave me the following particulars of her history:—

She is in the twenty-ninth year of her age. When fourteen years old she first menstruated, and during the first catamenial period she took cold, which suddenly suspended the discharge, and this was succeeded by very severe pain. The menses did not recur again for two years, but since their establishment they have always been regular in their return, though invariably painful, and, at times, clotted. When twenty years old, she married Capt. R. K., who is still living. She has had four children. Her first child she suckled over two years; the second, over one year; the third, five months, when it died; and the fourth, thirteen months old, is now at the breast. Three weeks after her third confinement, which was on the 1st of March, 1846, she was attacked with inflammation low down in the right side. During this attack, she felt, low in the right side, a tumour about the size of her fist, oblong in shape, and very movable. It was then so movable that it would fall from side to side, and could easily be taken hold of by the hand. About three months after this she had another attack of inflammation in the same place. For both these attacks, she was very actively treated by an intelligent physician of this city. She was bled, leeched, cupped, and blistered. The tumour has always been sore to the touch, and increased regularly, but slowly in size. Her fourth child was born September 1st, 1847, and about four months before this event the tumour became fixed in the right side near the groin. Previously to this, however, it had been movable, and became gradually less and less so until it became permanently fixed. Since the last parturition, the tumour has enlarged with very great rapidity. Her general health has been, and still continues, pretty good. The tumour, however, is becoming very painful, particularly upon lying down, which prevents her getting much sleep. Ever since the birth of her first child, there has been entire procidentia of the uterus, which now exists to such an extent that the whole uterus hangs out between the thighs, subjecting her to the greatest inconvenience. This has been the case about seven years, and during this whole period urination has been difficult, and for one year past there has been equal difficulty in defecation. She is also subject to habitual constipation.

When the patient stands erect, dressed, she looks as large as a woman at full pregnancy, but by no means as symmetrical in shape. The right side, low down, is exceedingly prominent, both laterally and anteriorly, so as to catch the eye at once. On exposing the tumour in the same position, it is seen to overlap the groin, so as to project downwards upon the thigh in such a way that the open hand, placed between it and the thigh, and its ulnar edge pressed against the groin, is completely buried beneath it. This portion of the tumour presses so much against the upper part of the thigh, when the patient sits, that she cannot bring her thigh up to a right angle.

Upon placing the patient in bed upon her back, and exposing the abdomen, the tumour seems more prominent, in consequence of the abdominal viscera receding. It fills up the whole of the right iliac and right lumbar regions, the whole of the right side of the hypogastric and umbilical regions, overlapping the crest of the ileum, and the whole of the groin, and burying within it the superior and inferior spinous processes of the ileum. Upon pressing in the walls of the abdomen around it, it can be felt dipping deeply towards the spine and into the pelvis. On its anterior surface can be felt and seen a shallow sulcus, running obliquely across the tumour, from the right lumbar region to the symphysis pubis, which seems to divide the mass into two unequal portions, the smallest being beneath. The tumour is very firm in texture, though faintly elastic, but does not in the least fluctuate. It is so remarkably prominent that it can be clasped between the two hands placed on opposite sides of it; but, even with such a purchase, it can be only very slightly moved—indeed, it seems so firmly fixed, that its mobility is doubtful. The tumour is more or less sore on handling, but pressure on its upper part gives her most pain. The skin over the whole tumour is perfectly movable.

The uterus is lying between the thighs, and has dragged the vagina with it, so that it is completely inverted. It is somewhat tumefied. After some manipulation, I succeeded in reducing the uterus and vagina, and proceeded to the examination, both per vaginam and per rectum. The rounded and resisting surface of the tumour can be felt projecting deeply into the pelvis upon the right side, occupying a position between the rectum and vagina; and here, also, it seems *very* indistinctly movable. Immediately after concluding this part of the examination, the uterus was again expelled.

On percussing the surface of the abdomen, every part occupied by the tumour returned a flat sound, and all other parts were resonant. The intestines were principally upon the left side. In the region of the left ovary there also appeared to be some thickening.

This examination caused some soreness and shooting pains through the tumour for a couple of days after.

October 31*st*. My brother, Dr. J. L. Atlee, being in the city, and my uncle, Dr. E. A. Atlee, examined the patient with me to-day. The tumour has increased in size, but in other respects the condition of the patient is the same as above stated.

January 10*th*, 1849. I called to see Mrs. R., with my friend, Prof. W. R. Grant, M. D., with the view of further exploring the tumour, in order to ascertain more exactly its character. Into the most prominent part of the tumour, below the sulcus, I now plunged a trocar and canula directly down to the depth of about three inches. It required considerable force to drive it in. At first, I passed it in about an inch and a half, and withdrew the trocar, but as nothing flowed out, I again introduced the trocar, and pressed it up to the hilt. Still nothing flowed through the canula, not even blood. Permitting the canula to remain, I passed a probe through it, and it came against a resisting substance of great solidity. On attempting to withdraw the canula, I found it difficult to do so; it stuck very firmly, being grasped by the firm tissue of the tumour, so as to offer great resistance to its escape. Immediately on the removal of the canula, about an ounce of venous blood escaped from the wound. Very little pain accompanied the puncture.

Before using the trocar, I divided the skin, with the scalpel, about an inch in length, and to the depth of the surface of the tumour, in order that we might see its surface, and also estimate the character of the attachment, at this point, between the tumour and its coverings. The tumour is considered to be fibrous in its character.

At this time, the following measurements were taken: A tape, placed on the middle of the crest of the ileum, against the exterior and superior edge of the tumour, and stretched across it, parallel with the sulcus, to the symphysis pubis, against the anterior and inferior edge of the tumour, measures fifteen inches; another, placed at the interior and superior edge of the tumour, about two inches to the left of the umbilicus, and passing at right angles across the first tape, to the middle of the groin, against the exterior and inferior edge of the tumour, measures thirteen inches; one encircling the tumour, on the plane of the abdomen, twenty-six inches; and, lastly, one passed round the hips and tumour thirty-nine inches. These measurements, as well as the location, size, and general appearance of the tumour, will be better understood by referring to figure 1st, sketched by Dr. Grant.

The tumour, at this time, was immovably fixed in its position, and is still increasing in size. The operation was followed by no unpleasant results; the wound healed up kindly, and with very little suppuration.

15*th.* To-day I informed the patient that I had concluded, after due consideration, to give her the chance of an operation if she desired it. Previously to this, we had frequently talked over the propriety of an operation; but, until the exploration on the 10th instant, I could not fully consent to undertake it, and my assent was given only on the following conditions: that she would weigh well all the dangers of the operation, which were clearly and fairly represented. I informed her that the tumour was so firmly attached to the bones of the pelvis that it rendered her case, at this stage of it, quite obscure; that it was impossible to say whether it was a fibrous tumour of the uterus, or of the ovary; but, from the history she had given of it, I considered it one or the other; and that, in either case, I thought an attempt at its removal, in view of the rapidity of its growth and its great annoyance, was perfectly justifiable. I also informed her that this attempt might fail; that the tumour was manifestly so incorporated with the bones and large arteries of the pelvis, that the accomplishment of its removal was uncertain; that I would, notwithstanding, make the attempt, if she desired it, and proceed with the operation as long as I considered it safe to do so, with the view of completing it; but that, if anything, during its progress, should show that it would be necessarily fatal to proceed, I would stop short of that point, and close up the wound without finishing the operation.

The patient replied, that she had well considered all the dangers of the operation, that she had made up her mind to have it done, and that she would leave all the arrangements for it to me.

20*th.* Dr. Grant called with me to see the patient, and I reiterated the above statement in his presence, and received the same reply. He, also, assured her that his views corresponded with those expressed by me.

After this the tumour continued to increase rapidly in all directions, becoming more and more burdensome. Her sleep was greatly interfered with, and she suffered severe pain and soreness through the tumour and lower limbs.

March 6*th.* The size of the tumour and sufferings of the patient are causing her to be urgent about the operation. I have, therefore, fixed on the 15th instant for it. Before undertaking it, however, I thought it best to sound the uterus and bladder. Simpson's sound passes into the uterus, as it lays between the thighs, to the distance of five inches, unaccompanied with pain or soreness. The vesical sound indicates no particular irritation of the bladder, although its introduction occasions a slight sensation of pain.

From this time until the day for the operation, the patient was directed to be particularly careful of her diet, to live on light, nutritious, unstimulating food, to keep her bowels regular, to avoid exposure and fatiguing exercise.

13*th.* The patient took a dose of castor oil this evening for the purpose of entirely unloading the alimentary canal, and she was ordered not to take any solid food afterwards. After the operation of the oil, she was consequently kept on liquid and light diet during the succeeding day and night, so that, on the morning of the day appointed, I found my patient in an admirable condition for the operation. Her pulse was eighty-two to the minute.

15*th.* At ten o'clock A. M., all the arrangements for the operation being ready, I stated to the medical gentlemen present what I had before stated to my patient. Dr. Grant, as my principal assistant, and Drs. E. A. Atlee, Darrach, Meckley, McIntyre, Kaski, Hunter, and Gobrecht, and Messrs. Murray and White, medical students, with several female friends, were present. After the patient was placed upon the table in the proper position, thirty or forty drops of a mixture of one part of chloroform and two parts of ether were poured into a handkerchief, folded like a funnel, which was placed loosely over the mouth and nose, so as not to exclude atmospheric air, in which way she inhaled it until she lost sensibility, requiring, for this purpose, not over one minute. I permitted her to become perfectly unconscious for the first incision, as it necessarily would be a very extensive one, and through the most sensitive tissue. Immediately upon the full action of the chloroform being established, I made an incision, extending from the symphysis pubis, across the tumour, below the sulcus, to the middle of the crest of the ileum on the right side. This incision was curvilinear, its convexity presenting downwards, its greatest distance from the sulcus about three inches, while its two extremities approached the sulcus, so that the incision represented the arc of a circle, while the sulcus represented its chord; or, in other words, the former was the bent bow, and the latter its string. The incision was sixteen or seventeen inches long, and was at once boldly carried down to the surface of the tumour through all the intervening tissues. This portion of the tumour was covered by a dense aponeurosis, derived most probably from an expansion of that portion of the united tendons of the internal oblique and transversalis muscles, which is inserted into the linea ileopectinea, and also of the inferior border of Poupart's ligament. The whole tumour, below the sulcus, was covered unequally with this aponeurotic expansion. It was, however, not firmly adherent, but was readily and rapidly detached from the surface of the tumour by the point of the index finger and handle of the knife. By this means (the finger, the handle and edge of the knife), the tumour below the sulcus was easily exposed; but considerable difficulty arose upon reaching the sulcus. This was found to correspond with an indentation in the tumour about an inch deep, and occupied by Poupart's ligament, and the lower edges of the abdominal muscles, Poupart's ligament being tightly stretched, from the superior spinous process of the ilium to the symphysis pubis, across the tumour, and, as it were, sawing into its very substance, and binding it down into the bones of the pelvis. It was with great difficulty that the ligament was dissected from this deep fissure, which being done, a body of muscular tissue—the abdominal muscles—had also to be detached, when finally I came upon the peritoneum, which, at this point, was reflected from the surface of the tumour on to the internal surface of the abdominal muscles. The peritoneum was now severed from one end of the incision to the other, after which I passed my hand into the cavity of the abdomen to survey the great body of the tumour, and to ascertain the existence or not of adhesions. There were no adhesions of the viscera to the tumour, and none between the peritoneal surface of the tumour, and the parietes of the abdomen; but the tumour was firmly bound down to the whole iliac fossa. With one hand in the abdomen, and the other on the outside, placed so as to grasp the tumour, I was yet unable to give it the least motion, and upon further examination I found that the tumour was *saddled* across the crest of the ileum, its superior and inferior spinous processes, and across the whole brim of the pelvis to the symphysis pubis, adhering firmly both to the fascia of the dorsum and to that of the fossa of the ileum, dipping down on each side of these bones, which penetrated deeply into its substance, and seemed almost incorporated with it. In extending the survey, within the abdomen, towards the linea alba, I found that the peritoneal coat of the tumour gradually run into, and became part of, the broad ligament of the uterus. While examining this part of the pelvis, I felt the common iliac artery of the right side beating strongly against my hand, and I could trace the external iliac in close contact with the tumour, passing beneath it, and pressed upon by it. A very strong muscular and tendinous attachment, binding the tumour down to the symphysis pubis, still remained at the internal extremity of the sulcus. This evidently was the insertion of Poupart's ligament, and was cautiously severed, with the hope of being able to tilt up this end of the tumour. Still, although it was liberated from all its coverings, from the grasp of Poupart's ligament, and the lower edge of the muscular walls of the abdomen, the tumour remained immovable. After detaching the pubic end of Poupart's ligament, and exposing this part of the tumour, the round ligament of the uterus came into view, passing close upon the tumour, indeed seeming to penetrate into its substance, curving through the tumour from the uterus to its insertion in the pubis. It was very much elongated and relaxed, and was carefully detached by the knife and left entire. The proper pedicle of the tumour—the broad ligament and Fallopian tube—was the only attachment remaining, excepting those very firm and extensive adhesions to the bony pelvis above described. At this stage of the operation, I felt like coming to a stand, closing the wound, and leaving the patient to her fate; but, upon reviewing the whole ground, I concluded that, although the separation of the tumour would be exceedingly difficult, yet it involved no positive risk excepting the attachment to the iliac and femoral vessels. From the middle of the crest of the ilium to the symphysis pubis, the edge of bone was deeply buried in the tumour, which overlapped it to a considerable extent on both sides, adhering to the fascia of the fossa and dorsum of the ilium. It was plain, therefore, that there was no other danger than the iliac and femoral vessels, which, with proper care, could be avoided; and, not deeming the difficulties insurmountable, I determined to proceed with the operation. Passing my left hand into the cavity of the abdomen as a guard to the intestines and iliac vessels, and, at the same time, as a guide to direct the cutting instruments over the face of the iliac fossa, and directing an assistant to seize hold of the tumour that it might be strongly and forcibly lifted up, and tilted from side to side as the separation progressed, I attempted to use the scalpel in the ordinary way; but this was impossible, in consequence of the inconvenient angles at which the knife had to be used, as the tumour overlapped the bones to so great an extent, and was so closely incorporated with them. I was, therefore, forced to introduce the point of the knife between the crest and planes of the ilium and the tumour, and thrust it forward like a chisel, substituting at times the probe-pointed bistoury, at others, a strong scissors, before I could detach any portion of it. I finally succeeded, however, by scalpel, bistoury, and scissors, in relieving it from its attachments to the crest of the ilium, and the corresponding external and internal faces; and next, from the superior and inferior spinous processes, and the corresponding portions of the iliac fossa. This was an exceedingly difficult part of the operation, as the tissue of the tumour itself was so unyielding, as well as its attachment to the bones, that little aid was received from the assistant's efforts to manage the tumour to my advantage. The knife, too, had to be directed solely by the sense of touch, as nothing here could be seen. After accomplishing this much, however, the remaining adhesions to the brim of the pelvis admitted of the tumour being tilted backwards and forwards, so that the future dissection could be directed by the eye. This was fortunate, as particular caution was requisite, in consequence of the relation of the iliac and femoral vessels to the tumour. Upon attempting to raise the latter from its bed, it was found that these vessels were also elevated, showing an attachment between them, or at least their sheath, and the tumour. Before separating this attachment, I dissected the tumour from everything else. I cut through the sheet of peritoneum, constituting the broad ligament, until I completely insulated the pedicle of the tumour, which contained the Fallopian tube, and then passing around it a six-stranded silk ligature, waxed, but not twisted, Dr. Grant tied it securely. Upon drawing the first knot, the usual manifestations of ligating the Fallopian tube were quite evident. The pedicle, which was small and principally membranous, was now detached close upon the tumour. The only adhesions now remaining were those to the vessels. This dissection requiring great care, and the day being dark, in consequence of the sky being overcast with clouds, I had two sperm candles lighted to enable me to prosecute the balance of the operation with safety. This was satisfactorily done, and the tumour was lifted away.

There still remained, adhering to the ilium, brim of the pelvis, and vessels, small layers of fibrous matter belonging to the tumour, but which could not be separated with it. This was all carefully dissected off, excepting a small portion adhering to the vessels.

The wound was now carefully examined, the clots were removed by picking them out, and the parts well cleansed with soft sponges dipped in lukewarm water. A vein was found bleeding on the internal face of the abdominal muscles, and tied; and the wound was left exposed for some time afterwards. No other vessel required the ligature. The hemorrhage was principally venous, and did not exceed in amount four ounces.

The omentum, which was largely about the wound, was now spread evenly over the intestines, and the wound was brought together, and secured by eight needles with twisted sutures, between which were placed numerous strips of adhesive plaster—the two ligatures being brought out at the nearest points. Over these was laid a thick napkin soaked with lukewarm water, and over all was applied a figure of eight bandage, including the right thigh. The patient had her clothing changed, and afterwards carried to bed. The uterus was replaced in the pelvis. A few teaspoonfuls of brandy and water were given to her, although there was no evidence of great prostration, her pulse having remained good to the last.

The patient, although under the influence of anæsthesia, sufficiently to destroy all sensation of pain, retained a certain amount of consciousness, as she conversed with me most of the time during the operation in reference to its various stages; and when the tumour was removed, she asked if it was out, and requested to see it. It was immediately lifted up and shown to her.

The intestines remained perfectly quiet. The stomach and diaphragm were equally undisturbed. There was no action of the abdominal muscles. Everything about the abdomen seemed almost as passive as in the subject on the dissecting table during the whole operation, which lasted thirty-seven minutes. The temperature of the room was kept at about 80° Fahrenheit.

The patient was now placed upon absolute diet, and the dressings of the wound were to be kept constantly moistened with cool water. Drs. Kaski, Hunter, and Gobrecht, recent graduates, and Messrs. Murray and White, students of medicine, were appointed to take charge of the patient, and in turns to watch her night and day, charged to make hourly memorandums of her condition, and to report to me any unfavourable symptom that should arise.

At 3 o'clock P. M, her pulse was 96, soft, and open; skin warm and soft; reaction is becoming pretty well established; complains some of pain in the back, to relieve which, she was inclined upon the right side; yawns; some oozing of blood from the external angle of the wound; there has not been any gastric or diaphragmatic disturbance, and no tendency to sinking. Removed by the catheter ℥j of clear and good-coloured urine. Thermometer 76°. Has been drinking barley water.

5 P. M. The patient has had several sweet naps of from fifteen to twenty minutes each. At 4, she rejected a little of the barley water. The pulse is 102, more quick and slightly hard; skin warm, though not above the natural temperature; still yawns; the nose has not yet recovered its natural heat; oozing of blood from the external angle of the wound continues.

11 P. M. The patient is in excellent spirits; talks cheerfully; has had frequent short sleeps; pulse 108; skin dry, and slightly above the natural temperature; palms and tongue dry; considerable thirst for cold drinks; the nose has recovered its natural temperature; reaction perfect. Catheterism: ℥viij clear and high-coloured urine. Changed the position of the patient, and her under clothing. Allowed iced drinks.

16*th*, 9 A. M. For about two hours in the middle of the night the pulse was 110 to the minute. The patient, however, had a comfortable night. The pulse now is 108, soft, less quick, and more full; skin soft and more natural in feel; temples moist; less thirst; tongue dry in the centre; still complains of her back, and some headache. The patient is quite cheerful; laughs, and talks, and says she "feels like herself again," and thinks she is going to get well. There is very little oozing from the wound, the clothes beneath being stained more by the water dressing than by blood. By catheter drew away ℥viij of pretty deeply coloured urine, which, on cooling, deposited a copious sediment of mucus. Changed her clothing and position.

1½ P. M. Dr. Fox called to see the patient with me; is delighted with her condition, and says he never saw a patient in a better situation after any operation; pulse, 104.

6¼ P. M. Complains of some flatulent pain in the left iliac region. Gave forty drops of McMunn's Elixir of Opium. Drew off ℥viij urine, having a peculiar *burnt* smell, and a bitter taste.

10 P. M. Found her sleeping very sweetly; the pulse and respiration were timed while she was asleep, the former was 98, the latter 26. She awoke cheerful. Drew about ℥iv of pale urine; there is no weeping, or at

least very little, of bloody serum from the wound; changed her clothing, during which she helped herself.

17*th*, 9 A. M. The patient has had a most delightful night, sleeping most all the time. Pulse 96, both before and after changing her clothes. There is a decided purulent odour arising from the wound. Found her reading a book, which I removed, as improper. Catheterism: urine ℥xij. She is desirous of engaging in conversation.

11 P. M. Has had a very comfortable day; was cheerful, talkative, and disposed to be jocular. In the evening some restlessness, until the catheter was used. Pulse 88, soft and full; respiration 25; skin soft and cool.

18*th*, 9 A. M. Rested well all night; pulse 88, and natural; skin and tongue natural; a fine flow of spirits; the patient jokingly asked to sit up on the rocking-chair. Catheterism: urine ℥xviij. Menstruation since last evening at 6 P. M. Allowed her to-day chicken water, thin mutton broth, oyster broth, and ice cream. Ordered ℥ss of castor oil, to be taken about 11 A. M.

6 P. M. Administered an injection; it came away without any feculent matter. Repeated the oil.

10 P. M. Oil has not operated. Ordered injections every two hours. Drew off ℥xx of urine, having a strong phosphatic odour.

19*th*, 4 A. M. The injections having brought away very little feculent matter, a tablespoonful and a half of oil were administered, which in half an hour was followed with a discharge of fæces, unaccompanied with pain.

9 A. M. The oil has operated well, and is seen floating on the discharge. Removed ℥xvj of urine, containing phosphatic deposit. For the first time has a desire to urinate.

2 P. M. Examined the wound; it promises to heal by the first intention, no inflammation on the edges. All symptoms highly favourable.

20*th*, 2 P. M. Symptoms all favourable; pulse 84; passes urine without the catheter. Dressed the wound; removed all the needles; the wound has healed by first intention, excepting at the two points where the ligatures escape, and here there is merely a show of laudable pus.

25*th*. The patient has been continually improving, and is allowed to sit up in bed to-day, with a chair behind her.

On Thursday, March 29th, she commenced sitting up out of bed, and afterwards continued to do so daily.

The ligature of the pedicle came off on Tuesday, April 3d, and that of the vein the day after. On Thursday, April 12th, the patient rode out for the first time, after which she continued to take exercise daily, until her health was perfectly re-established.

There was no suppuration from the wound excepting along the track of the ligatures, and this certainly did not amount to over a teaspoonful during the whole period.

Subsequently to the operation, the patient was visited occasionally by those medical gentlemen present at the time, and also by Doctors Fox, Norris, West, Dorr, Harry, Gallaher, Whiteside, and Brookfield.

The tumour weighed eight pounds, measured round its greatest circumference two feet three inches, and round its least, twenty-three inches. It is fibrous, or fibro-cartilaginous, and, in most of its characteristics, resembles the tumour I removed from Miss L. P., in 1844. [See *Amer. Med. Journ.*, April, 1845, p. 320.] The drawings, Figs. 2 and 3, exhibit the general appearance of the tumour. The specimen, and a wax cast of it, taken by Prof. Grant, may be seen in the pathological museum of the Medical Department of Pennsylvania College.

Fig. 1.

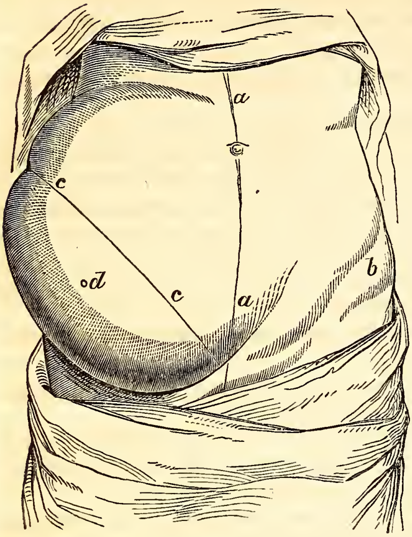


Fig. 2.

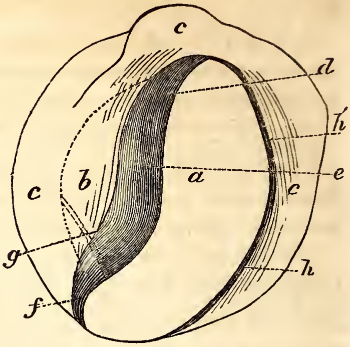


Fig. 3.

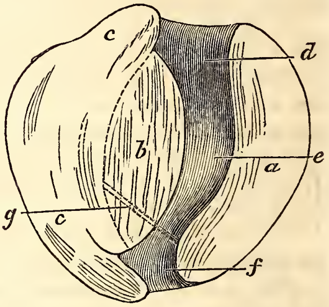


Figure 1 represents the tumour before its removal; *a a*, the linea alba; *b*, the left hip bone; *c c*, the sulcus; *d*, the cicatrix left by the trocar.

Figures 2 and 3 represent the tumour after its extirpation: *a* the portion below Poupart's ligament, [the sulcus, *c c*, in Fig. 1,] and which is not covered with peritoneum; *b*, enclosed by the dotted line, the portion attached to the iliac fascia, and likewise not covered with peritoneum; *c c c*, the great body of the tumour, which occupied the abdominal and pelvic cavities, and covered with peritoneum; *d*, a fissure from one and a-half to two inches deep, the bed of the crest and superior spinous process of the ilium; *e*, a fissure made by the rim of the pelvis; *f*, continued to the symphysis pubis; *g*, the bed of the external iliac vessels; *h h*, an indentation from a half to one inch deep, formed by Poupart's ligament.

Remarks.—Difficult as it was, before the operation, to decide upon the real character of this tumour—whether it was a fibrous tumour of the ovary, or of the uterus—it is, perhaps, equally as difficult, since the operation, to decide this question. In the heading of this report, I have called it an *ovarian* tumour, because its whole history, and the character of its pedicle, would seem to indicate this; and yet its peculiar structure is precisely the same as that of those solid tumours which originate in the uterine tissue itself. In the extra-uterine fibrous tumours, the pedicle is usually short, thick, and fleshy, while in ovarian tumours it is as frequently long, thin, and membranous. The latter condition obtained in this case, and yet there is a pathological specimen in our museum, of two small fibrous tumours, attached to the posterior wall of the fundus of one uterus, both of which have membranous pedicles, similar to those found in ovarian tumours. If this, therefore, were a uterine tumour, with a membranous pedicle, then the presence of the Fallopian tube was an accidental occurrence.

From the intimate connection which the tumour had with the bones of the pelvis, it might, at first view, be supposed to be independent of both the ovary and uterus, and, like other hard periosteal tumours, to have originated from the periosteum of those bones, its attachment to the Fallopian tube being also accidental, and its relation to the broad ligament of the uterus being established by its development in that direction. This, perhaps, would be the most plausible inference, if it were not for its early history; but one is entirely irreconcilable with the other. In a pathological point of view, therefore, the questions are particularly interesting: How did this tumour become so closely incorporated with the bones of the pelvis? and how can it be explained that Poupart's ligament was dislocated by the tumour, and imbedded in its substance, if it be either ovarian or uterine? These questions, I think, may be satisfactorily answered. The patient had two attacks of inflammation in the right side low down, with an interval of about three months between them. During the first attack, she discovered the tumour. Lymph, no doubt, was thrown out at this time, which caused the tumour to be attached to the iliac fossa, the adhesions being long enough to allow of considerable motion. After this, the patient became pregnant, and as the uterus enlarged in proportion as gestation progressed, in the same proportion the tumour became more and more firmly fixed into the iliac fossa, and, in consequence of being pressed into the right groin by the enlarging uterus, it formed attachments to Poupart's ligament. Four months before this parturition, the tumour became so adherent that the patient could not move it, although during this period it did not appear to enlarge. After parturition, the tumour, becoming more active, began to grow, and developing itself in all directions, it, as it were, wedged itself under Poupart's ligament, which, adhering to the tumour, was elevated by it as it grew, until it was completely detached from the groin. As the tumour continued to grow rapidly, carrying with it the attached Poupart's ligament, it entirely destroyed the normal relations of the latter to the pelvis. Its pubic and iliac extremities only retained their natural attachments, while the rest of the ligament, with the inserted muscular fibres, was buried in the tumour, and elevated several inches, so as to be entirely dislocated from its original bed. This view of the development of the tumour is supported by the external appearance of that portion of it, *a*, Figs. 2 and 3, which was below Poupart's ligament [the sulcus, *c*, *c*, Fig. 1], as it is not covered with peritoneum, but has, instead, muscular and aponeurotic fibres traversing its surface; while the rest or great body of the tumour, *c*, *c*, *c*, Figs. 2 and 3, which was above Poupart's ligament, and within the abdominal cavity, is covered with peritoneum.

Having thus shown how Poupart's ligament, became involved with the tumour, and dislocated by it, I will now inquire into the curious circumstance of a loose tumour becoming so intimately incorporated with the bones of the pelvis. The above ligament has had much to do in this matter. After the tumour had formed adhesions to the iliac fascia and to the ligament, and after it had developed itself beneath the ligament, so as to raise the latter from its natural position to one across the tumour, it can readily be conceived how a ligament, as strong and resisting as Poupart's, and situated as it was, bound firmly by its two extremities to the iliac and pubic bones, and traversing the tumour, must have powerfully opposed its upward development, and impelled it forcibly upon the bones beneath. The tumour, thus confined between two fixed points, while it still continued to grow, necessarily overlapped the unyielding bones of the pelvis, and formed those strong adhesions which were found to exist, and which rendered the tumour so immovable.

With regard to the use of chloroform in gastrotomy, I would remark that it is likely to strip this operation of some of its dangers. Such perfect quietude of the diaphragm, of the abdominal muscles, and of the viscera, is maintained, that the operation is greatly simplified and facilitated. It does away with the necessity of constantly handling the ejected bowels, to keep them out of the road of the surgeon's knife, a circumstance, in itself, calculated to induce inflammation of the peritoneum, in consequence of the greater or less contusion, by this means, of the coats of the intestines. These tender viscera, also, in not being expelled from the cavity of the abdomen, are not exposed so much to the irritating effects of atmospheric air and diminished temperature, other causes for inflammation. Besides, the operation is not accompanied with, or followed by that shock to the system which almost invariably is connected with it under other circumstances, and which is succeeded by a corresponding reaction tending to inflammation. And it also enables the operator to do without an opiate to quiet the peristaltic action of the bowels at the time of the operation. These effects were fully illustrated by the above case, and also by two other more recent cases, which I expect to report in the next number of the Journal. The use of anæsthesia, therefore, is calculated to render gastrotomy a much less dangerous operation.

In consequence of the muscular excitement occasionally induced by the inhalation of ether, I have never been reconciled to its use; and have, therefore, always preferred the employment of chloroform. The latter I have used very frequently without producing any alarming symptoms. In two cases, however, in which I administered it, soon after its introduction in surgery, it was followed by unpleasant results. Both patients were ladies. One of the operations was a subcutaneous section of a ganglion on the wrist joint, the other the extirpation of an encysted tumour on the arm. In both, after the effects of the chloroform went off, syncope immediately supervened, which was followed by vomiting of undigested food, and subsequent speedy recovery. In both cases, the chloroform had been inhaled soon after taking a meal, and had the effect of arresting digestion. Since then, I have never given it on a full stomach, and no such effects have followed.

Although I have said that no alarming symptoms have ever happened in my hands from the use of chloroform, I have, notwithstanding, ceased giving it by itself, in consequence of several cases of death from it having been reported. I now substitute a mixture of one part of chloroform and two parts of ether, liquid measure, which has a most delightful effect upon the patient. The too great sedative action of the chloroform is counteracted by the stimulating effects of the ether, and, *vice versa,* the too stimulating action of the ether is counteracted by the sedative effects of the chloroform. From half a drachm to two drachms will accomplish the object in from one to two minutes. So soon as sensation is destroyed, I withdraw entirely the agent, allowing only the respiration of pure atmospheric air. I consider a linen handkerchief, or napkin, ironed smoothly, and folded in the form of a funnel, so as to enclose the nose and mouth loosely, infinitely superior to all other contrivances for its administration, and also safer. It never completely excludes atmospheric air, and consequently prevents the asphyxia likely to be induced by the undiluted anæsthetic vapour.

I observe, that Dr. Warren, of Boston, uses two parts of the purest alcohol, with one part of chloroform. My colleague, Professor Gilbert, who first employed these agents mixed, uses one part of chloroform with seven parts of ether. I think they, and others, upon trial, will much prefer the mixture which I am in the habit of employing.

Before closing this paper I desire to correct a statement made by Dr. Lee, in his valuable work on *Tumours of the Uterus,* pp. 198–99. Dr. Lee, speaking of the case of fibrous tumour of the uterus, which I reported in the *Amer. Med. Journ.,* April, 1845, p. 309, says that my patient "*had a very narrow escape from great hemorrhage,*" that the "*hemorrhage was excessive,*" and that "*this patient nearly lost her life from the great bleeding consequent upon the operation.*" Now the truth is, that the hemorrhage was trifling—indeed, none at all from the *patient.* At page 314 of the above Journal, the report reads as follows: "The pedicle was now severed close to the tumour. At this instant, a gush of blood took place from the cut surface, but it being black, our apprehensions were soon allayed—*it was the strangulated circulation of the tumour,* amounted to from *two to four ounces,* and *was the only hemorrhage that occurred.*"

Art. III.—*Ligature of the Common Carotid Artery.* By John P. Mettauer, M.D., LL.D., Professor of Principles and Practice of Medicine and Surgery in the Medical Department of Randolph Macon College, Virginia.

Since Abernethy's operation, performed in 1798 or '99, ligature of the common carotid has been frequently and successfully resorted to, both in this country and Europe. Even both carotids have been ligated, after various intervals of time, however, and patients have recovered. The dangers of the operation have led surgeons, nevertheless, to undertake it with extreme circumspection, which is evinced by the fact that a majority of the operations, already performed and reported, were executed by the more experienced operators. The possibility that the important organs involved in the operation might become extensively and violently inflamed, seemed to constitute the chief danger incident to it. Within a few years past, the attention of surgeons has been directed to disturbances of the cerebral functions, following ligature of the common carotid artery, and there is good reason to believe that a majority of the unsuccessful operations were rendered so chiefly by those disturbances, as they marked the cases in greater or less degrees of intensity. The object of this paper is to lay before the profession a few observations touching those disturbances, deduced from two unsuccessful operations, performed by the writer.

Before the cases to be reported in this paper terminated unfortunately, I had never supposed ligature of the common carotid could be defeated, or rendered unsuccessful, by any other accident than inflammation and its consequences, especially suppuration; or hemorrhage, from an unsound condition of the artery itself, disposing its walls to ulcerate, or to slough, from the pressure of the ligature. It never struck me, in reflecting on the operation, that the brain would be likely to suffer seriously, by cutting off the direct supply of blood from the corresponding hemisphere; or, that an altered condition of the circulation of it could possibly impair the cerebral exercises seriously; knowing, as I did, that the carotids of the opposite sides communicated freely by numerous anastomoses, and the vertebral arteries by large inosculations in the region of the sinuses of the cuneiform process of the occipital bone, the falx, and the hemispheres of the cerebellum, and especially by a branch from the deep-seated artery. I supposed there would be very little more disturbance in the cerebral functions of the brain, than in the innervation of the nerves of a limb after the operation for aneurism, and that it would soon subside in health, after the altered condition of the circulatory organs was perfected. The cerebral disturbance which followed my first operation, although considerable, was not altogether unexpected; and I indulged the hope that it would soon pass away, with the re-establishment of the circulation of the corresponding hemisphere, in the altered condition of its arterial arrangement. With anxious care I watched the progress of this, my first case of ligature of the common carotid artery, scanning the unpromising symptoms with a scrutiny and devotion which none can appreciate but a surgeon who has passed through a similar trial; one moment, interpreting the partial paralysis favourably; the next, referring it to some incorrigible lesion of the hemisphere, corresponding with the ligated carotid, and ready to relinquish the case as lost. For more than ten days I anxiously watched over, and laboured with this case, which terminated in death on the twelfth from the day of the operation, and not on the eighth, as reported to the Committee on Surgery, which report was made from memory. This case, as well as one other contained in this paper, were briefly mentioned, not actually reported in detail, to the Committee on Surgery of the American Medical Association, through Dr. Norris, during the winter of 1847–48. The operation was performed on the 12th of May, 1829, and the patient died on the twelfth day after.

Case I.—The subject of this case was a man, forty-three years of age, who had anastomosing aneurism of the antrum and nasal cavities, of many years' continuance, which had subjected him to frequent and exhausting hemorrhages, and had produced great debility, and a state of complete anemia. The anemia was such that the blood discharged from the tumours, the day preceding the operation, would barely stain a white cloth. For months previous to the operation, the appetite was almost extinct, and the bowels constantly locked up, unless when opened by cathartics; and to the action of these they responded reluctantly and very imperfectly, seldom displaying in their evacuations the evidences of the biliary secretion. From the time the case came into my hands to the period of its fatal termination, the pulse constantly displayed the characters peculiar to reaction from excessive losses of blood. Occasionally, too, during this period, there was slight delirium, especially during the night. And there was very considerable emaciation.

In the performance of the operation, the region below the musculus omohyoideus was selected; and, without describing the precise mode I adopted in its execution, I will observe that it was accomplished with little difficulty, and without a single untoward occurrence. Not more than half an ounce of blood was lost, and the time consumed was so brief that the patient declared that the operation was completed before he had time to complain. After forming the incision, which was done in the usual manner, and laying open the sheath, the ligature was passed from within, which enabled me to guard against a slight bulging of the vein that otherwise might have caused some difficulty; and I employed a short blunt needle considerably curved, armed with an animal ligature formed of thin buckskin, well stretched and rolled, conveyed beneath and around the artery with Physick's forceps. Not the slightest injury to either of the accompanying nerves was effected. The free extremities of the ligature were carefully tightened, after placing them together, so as to elevate the artery somewhat, which enabled me to satisfy myself that nothing but the artery was included by it. After sponging out the wound carefully, the knot was formed, the ends of the ligature cut off close to it, and the wound closed and confined with adhesive plasters, supported by a light compress and bandage.

When the ligature was first drawn firmly on the artery, it seemed to produce a shudder through the whole frame; but it was transitory, and the patient expressed himself as being quite comfortable in a few moments after. He was placed in bed with the head somewhat elevated, and the neck entirely at ease. In this condition he slept a few moments, but was aroused from his slumber by a convulsive start of most of the muscles of the right side, the left carotid being the seat of the operation; the patient had a wild expression of countenance, and great restlessness. The pulse, too, was considerably agitated. Thinking revulsion to the bowels might relieve these symptoms, an active enema of strong salt water was speedily administered; and though several others were injected in rapid succession, as many as three or four, very imperfect and scanty evacuations from the bowels were procured by them. I now administered calomel, ten grains; scammony, six grains; aloes, twelve grains, in the form of powder; with directions to repeat the injections every half hour until the bowels were freely evacuated. This course of treatment was commenced about twelve hours after the completion of the operation. The injections were regularly administered, and the cathartic powder repeated after intervals of four hours, for twenty-four hours, without the least cathartic effect. Before the twenty-four hours had expired—one of the attendants supposed it was about fourteen hours after the operation—it was discovered that the right side was nearly paralyzed; and when the limbs of that side were moved, the motion was convulsive. The man was now entirely delirious; incessantly moaning; his voice had become hoarse and squeaking, like the bleating of a goat; there was great restlessness; the thirst was unquenchable; there was retention of urine, requiring the catheter to be used every seventh hour; and very considerable heat of skin and reaction of the pulse. On the third day, the bowels proving incorrigible yet, I detracted fourteen ounces of blood, hoping it might moderate the existing symptoms, and render the bowels more impressible to the cathartic means. The bleeding was well sustained, but it could not be perceived that the least benefit had followed from its use. Finding impressive cathartics answered no good purpose, those of a saline nature, variously compounded, were next resorted to, and largely and repeatedly used. These proving ineffectual, croton and castor oil were next had recourse to; the injections being at the same time employed, and were now conveyed high up into the sigmoid flexure of the colon, with a large gum tube. Under this active treatment, the bowels yet proved obstinately costive, although six days had now elapsed since the operation was performed. On the seventh, I had recourse to antimonials, in the dose of half a grain of tart. emet., in watery solution every second hour, employing hot fomentations to the hypogastrium—now decidedly tympanitic—after intervals of fifteen minutes. Blisters to the thighs and ankles were also used; and after a trial of the fomentations for ten hours they were superseded by a large epispastic, embracing the entire anterior wall of the abdomen. The lancet was only employed once, because there was such a giving way of the powers of the system in ten hours after, as to contraindicate its farther use. On the eighth day, the delirium had become comatose; the paralysis was complete; the bowels still unmoved, reluctant, in a great degree, to yield only very small portions of the numerous injections which had been thrown up into them; the pupils were greatly disordered, the left being unequally dilated, while the right was greatly dilated; the breathing was stertorous and laboured; there was singultus; the extremities, nay, the surface generally, was cool; the position was constantly dorsal; and the prostration was extremely great. The wound was frequently examined, and uniformly presented a most favourable condition. After this period, this unfortunate patient sank rapidly, so much so, as to have led me to expect death might take place on the night of the tenth day. He lingered, however, until the twelfth day from the operation, and expired in universal convulsions, the convulsions being more violent on the left than the right half of the body.

In reviewing the medical treatment of this case, I have only to regret that the lancet had not been earlier employed. If it had been used after the first convulsion, possibly the profound cerebral disturbances, and the incorrigible constipation, might have been obviated. In Kuhl's case, the remedy seems to have been productive of beneficial effects, and under circumstances similar to those which marked my own, especially the convulsions.

Case II.—The subject of this case was a healthy, robust young man, about twenty-five years of age, affected with false aneurism, resulting from a puncture of the internal carotid just above the bifurcation. The man had lost large quantities of blood from repeated hemorrhage; was greatly enfeebled in his muscular energies; was anæmic in an eminent degree, the blood barely staining a white cloth; short winded; liable to violent palpitations of the heart; his pulse constantly over-active, and distinguished by the characters peculiar to reaction from excessive losses of blood; he was liable to feelings of a virtiginous, or syncope-like nature; was pallid; had a remarkably pale tongue; his appetite was impaired as well as his digestion; and the bowels were almost constantly costive. Six weeks had elapsed from the time the wound was inflicted.

The operation was performed the 8th of March, 1842, and the region below the musculus omo-hyoideus was selected, as in the preceding case, for it. In this operation, which, in all respects, was executed like the first, no difficulty was experienced in any stage of its progress. The ligature was passed from within, conducted by the needle and forceps used in the first operation. And after being well satisfied that the carotid was the only organ included, after having first elevated the artery by making traction upon the ligature, the knot was formed, and the ends cut off near the knot. The wound was carefully sponged out, its opposing surfaces brought together, and confined in contact with strips of adhesive plaster, a compress and light bandage. The whole operation occupied probably ten or fifteen minutes' time, was not painful, at least so stated the patient, and not more than half an ounce of blood was lost. When the ligature was tightened upon the carotid, the man experienced a shudder, became sick and faint, from which he was, however, soon relieved by the application of ammonia to the nostrils, and a draught of fresh water, and free sweating followed. He now seemed entirely relieved from all unpleasant sensations, except the usual smarting, aching, &c., following surgical operations; was cheerful, in the hope that he would soon be well, and disposed to converse. He was put to bed, and desired to desist from conversation, and to sleep, if possible. Nothing of importance occurred until nearly 12 o'clock at night, about eleven hours after the operation was performed, at which time the man was seized with a rigor that continued, in greater or less degrees of intensity, until nearly seven the next morning. During this state, the mind was greatly alienated, and, in the use of the means for warming him, it was discovered that the left arm and leg were paralyzed, the operation having been performed on the right common carotid artery.

Second day, 7 A. M. Reaction was now very considerable, attended with an exceedingly rapid, convulsive, unsteady pulse. Although the action of the heart and arteries was tumultuous, the volume of the pulse was moderate, as well as its force; and, in all respects, much resembled the pulse during reaction from undue losses of blood in treating the more acute forms of typhoid fever. The delirium was intense; the thirst tormenting in the highest degree; great restlessness; headache, though badly defined by reason of the delirium, and an exceedingly hot skin. The pulse of the paralyzed arm was less full and strong than on the opposite side, and the heat of that side was less intense by several degrees. Vs. to fourteen ounces, and an active cathartic enema of strong salt water, were ordered. Refrigeration, both internally and by sponging with iced water, was also directed to be continued until the undue heat of skin moderated. 12 M. The bleeding was well sustained; the injections acted with moderate freedom, but not until three had been administered. The reaction and external heat were somewhat moderated; but the delirium and paralysis were not the least affected. I continued the refrigerants, using from this time half a grain of tart. antimon. et potass. in watery solution every second hour, with an enema of salt water every hour, and cold rice gruel as nourishment in small quantities, and after long intervals. 6 P. M. The symptoms the same as at last visit. I directed cal. ppt. ten grains; tart. emet. half a grain; nit. potass. seven grains every fourth hour, until free catharsis followed. Also, that rubefacients be extensively employed to the paralyzed extremities in succession during the night, and that blood be detracted at midnight to what extent the pulse would bear, supposed twelve ounces.

Third day, 7 A. M. Rested badly; indeed, the man had not slept two hours since the operation. The delirium profound; paralysis no better, pulse much enfeebled; skin still hot and dry; thirst intense. The calomel acted very imperfectly; I ordered the calomel, tart. emet., and nit. potass. to be continued; and epispastics to the legs and ankles of both lower extremities. Diet, the same as last visit. 12 M. Bowels freely acted on; delirium and paralysis unabated; extremities disposed to become cold; thirst still tormenting; and sleep of the dreamy, muttering description. The wound was now examined, and found to be doing well. 8 P. M. No better. Directed epispastics, which had drawn well, to be applied to the insides of the thighs, and a large one over the epigastrium to increase the means of revulsion. The calomel, &c., to be continued, but the intervals to be lengthened to five hours. Nourishment the same.

Fourth day, 7 A. M. Rested badly; delirium and paralysis the same as at last visit; bowels open, but the evacuation highly vitiated; retention of urine for the first time; debility increasing; occasional fits of coughing, but unproductive; breathing rather laborious; coolness of extremities increasing, requiring the constant employment of artificial heat to them; thirst unabated; position dorsal; occasional singultus, and a tendency to coma. Calomel, &c. to be continued; rubefacients to be employed to the upper and lower extremities, except to the blistered regions, in succession, till next day; epispastics to be kept on till next visit; artificial heat to be continued to the feet; and nourishment the same.

Fifth day. Symptoms decidedly deteriorated; delirium comatose; paralysis about the same; debility increasing; breathing quite laborious; cough more frequent with mucous rattle; tongue dry and foul, and teeth incrusted with dark sordes; singultus more frequent and troublesome; discharges from the bowels involuntary and fetid; retention of urine complete, requiring, as previously, daily catheterism. The wound again examined and found nearly closed by adhesion; was redressed. After this day no regular account of the daily progress and treatment of the case was preserved, believing it would speedily end in death. The symptoms progressively grew more unfavourable, and the treatment consisted chiefly of rubefacients, artificial heat, and incitants, when the powers of the system seemed to be rapidly giving way. On the twelfth day after the operation, instead of the tenth, as reported to the Committee on Surgery, from memory, death closed the scene.

In reviewing the medical treatment of this case, I do not know that any part of it does not meet my deliberate approval. Perhaps, had I such a case now to treat, I might urge bleeding farther, and possibly, too, resort sooner to the use of revellants. Whether any medical treatment could have corrected the conditions of the brain, upon which the grave symptoms of these cases depended, cannot certainly be determined. The operations were safely performed, as no other organ was touched or injured in the slightest degree, but those necessarily involved. And why were the operations followed by such untoward symptoms, and unfortunate results? This question I will next endeavour to answer, but will first state what were the post-mortem appearances.

In the first case, the body was examined eighteen hours after death. The abdominal cavity was first opened. The intestines were exceedingly pallid and bloodless, and extensively inflated with gas, which was fetid. The colour of the intestines was a pale yellowish-white. The stomach, spleen, liver, bladder, and kidneys, were also free from morbid appearances, save the remarkable paleness already noticed. The intestines contained little else than the medicines which had been used, and some brownish fæces. The thorax was next opened, and its contained organs, with the exception of the paleness, were found healthy and normal. The heart was singularly pale, and contained coagula, especially the right cavities, about the colour of softened glue, totally devoid of red globules. Like coagula were found in the pulmonary artery and aorta. About the usual quantity of serum was found in the different bags of the pleura. The lungs were perfectly normal and crepitant in every part of them. The encephalic contents were next examined. After removing the skull-cap, my attention was first directed to the left hemisphere, as the left carotid was the seat of the operation. The meninges exhibited no marks of inflammation. Upon removing the dura mater, or rather, after laying it open longitudinally, the hemisphere did not present the least vascular turgescence; and its convolutions were subsiding and shrunken; and the hemisphere imparted the sensation of fluctuation when pressed on opposite sides with the fingers. I plunged the scalpel into it and there was a gush of a thick semifluid about the colour and consistence of thickened milk. The opening was enlarged, and it was discovered that the entire hemisphere was in this state of ramollissement. I next examined the right hemisphere. Upon laying open the dura mater, which was free from diseased appearances, the convolutions of the brain were found turgid and plump, but presented no marks of previous inflammation. It was exceedingly pale, not only on its surface, but also throughout its interior. Its density was, perhaps, about normal. The cerebrum being removed, I next examined the cerebellum. This portion of the brain presented appearances very similar to those of the cerebrum. The left portion was morbidly softened, while the right was nearly normal as to density, but pale. There were no traces in the cerebellum indicative of previous inflammation; and no more serosity was met with in any part of the brain than usual, especially on the right side.

In the second case, the post-mortem examination was made twenty hours after death. *Abdomen.* With the exception of the unusual paleness, the organs of this cavity presented no unusual appearance. The stomach and intestines contained very little matter of any kind, as the bowels had been freely evacuated two days before death took place; and the comatose state had prevented the use of medicines and food by the mouth during that time. *Thorax.* The organs of this cavity were also free from the marks of disease, and were normal, with the exception of their peculiar paleness. The bags of the pleura perhaps contained more serosity than is usually met with: six ounces were obtained from them in the aggregate. The heart, pulmonary artery, and aorta, contained coagula of pale yellow matter, without a trace of red globules, and were exceedingly pale. *Head.* Upon removing the skull-cap, the dura mater appeared exceedingly pale; and the right hemisphere, when pressed on with the fingers on opposite sides, imparted the sensation of fluctuation. When laid open longitudinally, so as to expose the convolutions of the hemisphere—the right—they were soft, yielding, and somewhat shrunken. Cutting into it, a yellowish-white semifluid was discharged, almost identical in colour and consistence with that of the first case; and the entire hemisphere was thus disorganized. The left was very slightly changed, in any respect, from its normal state, except that it was unusually pale and bloodless. The right portion of the cerebellum was also found disorganized and completely softened; while the left was, as the corresponding hemisphere of the brain, nearly normal, except its peculiar paleness.

By reference to the post-mortem condition of the hemispheres of the brain, on the sides of the operations, a clue is furnished, by which to account for the unfortunate termination of the cases in question; and, when taken in connection with the favourable state of the parts involved in the wounds, there cannot be a doubt that death resulted exclusively from disorganization of the hemispheres of the brain. In both cases, the wounds had nearly healed by the first intention; and there was neither inflammation nor pus, in any part of them, beyond what might naturally be expected, under the most favourable circumstances of such wounds. The arteries, too, had become nearly obliterated, and were sound and healthy, both below and above the ligatures. An organized clot of febrile cohesion, however, plugged up each carotid below the ligature; and the trunk was very nearly severed by the ligature. The walls of the wounds were very slightly thickened, and seemed healthy, except unusually pale. Indeed, this yellowish-pale aspect seemed to pervade every structure, nay, it even extended to the blood, and was, doubtless, due to anemia, brought on by the profuse hemorrhages, often repeated, anterior to the operations. But will this anemial condition enable us to account for the ramollissement of the brain? I think it will, as anemia is always connected with reduction of vital force; and, to the extent, in some instances, of barely sustaining the organic and vital actions of the economy. My object, in this paper, is merely to suggest the idea, that the depressed condition of the energies generally, but especially of the brain, unfitted it eminently for the struggle in accommodating itself to the new vascular relations imposed on it, by cutting off the direct supply of blood through the main trunk of the carotid artery by the ligature; and the ramollissement followed, as mortification would do in an extremity, if operated on for aneurism, under like circumstances, in all probability. It has occurred to me during my many retrospects of these unfortunate cases, and I own that they have been numerous and intensely interesting, that possibly the usual anastomoses of the internal carotid and vertebral, might not have existed, and when the circulation was intercepted by ligating the main trunk of the carotid, the corresponding hemisphere was left entirely without blood. This thought did not present itself until long after the cases had ended, or I would certainly have tested its feasibility by injecting the arteries of the brain. In either case, the fact that grave cerebral disturbances often follow ligature of the carotid, points out the necessity of investigating their causes carefully, as well as expedients designed to ward them off, or to correct them. I think, in all cases, it would be safest and best not to intercept and cut off at once and completely the supply of blood by the carotid, in cases demanding its ligation; but to reduce the supply gradually, as the brain seems to bear it. This can easily be done, and it will enable the brain gradually to adapt itself to such changes as may be imposed on it by the operation. Should unpleasant effects follow, the full stream of the carotid might be restored, or such a portion as might be sufficient to support the exercises of the corresponding hemisphere. If no unpleasant effect follows, the supply may be gradually reduced, until, finally, it is cut off completely. And to accomplish these ends, I would suggest that a delicate double canula be invariably employed in the operation. If formed delicately, it will occupy no more space than the ligature, should the free ends be allowed to remain; and its presence in the wound would not prove irritating, to any dangerous extent, if at all. The only possible objection of any weight, that could be urged against it is that it might, to some inconsiderable extent, prevent union by the first intention. This, however, would be a small matter, when compared with the safety it would secure; but, it is questionable, if its presence in the wound could retard the cure in the slightest degree, as these wounds seldom, if ever, heal by the first intention. After unlooping the carotid with the ligature, its free ends may be passed through the barrels of the canula, and one of them secured to one of the ears. The other extremity being carefully tightened, the canula may be slid down upon the artery, where it can be confined by fastening the ligature to the remaining ear of the canula. Through the agency of this simple and handy contrivance, any degree of force may be communicated, either to cut off the supply entirely, or only partially; and should the hemisphere seem like suffering, or dangerous symptoms supervene, and it be deemed necessary to disembarrass the carotid entirely, the ligature and canula may both be removed at once, and without giving the least pain to the patient, or without reopening the wound. Another mode of obliterating the carotid, as well as other arteries, in a gradual manner, may be effected, by transfixing the vessel with delicate pins or needles, so as to destroy the arterial tissue of the part, and cause its gradual contraction and final obliteration. This expedient I have employed, but not with the larger order of arteries, and think well of it. If the transfixing is effectually done, entirely around the artery, for eight or ten lines in extent, it will seldom fail to cause the obliteration of arteries of moderate calibre; and the larger order I should suppose would be equally liable also to its obliterating effects, if the agency is effectually used.

In conclusion, I will merely state that an error has crept into the closing paragraph of the Report of the Committee on Surgery, touching the autopsy of my cases as respects the softening of the brain. The softening was on the side of the operation, and not, as stated in the report, on the opposite side. It is probable that I committed the mistake myself, in the hasty preparation of the paper transmitted to Dr. Norris, as I have found it difficult to avoid a like one in drawing up this.

PRINCE EDWARD COURT HOUSE, VA., *March 2d*, 1849.

ART. IV.—*Case of Lead Poisoning, with Recovery.* By JNO. C. DALTON, Jr., M. D. Read before the Boston Society for Medical Observation, June 5, 1848.

ELIZA T., a healthy looking child, four years of age, with light hair, brown eyes, and a delicate skin, entered the Massachusetts General Hospital, April 8, 1848, with partial paralysis of the upper and lower extremities. The friends reported that she, as well the other members of her family, was generally healthy; that three months before entrance she was first noticed to be weak in her feet and legs—more so on some days—less so on others; that this weakness gradually increased, with short intervals of temporary improvement, until she entirely lost the use of her lower extremities; so that for the six weeks preceding her entrance she had not been able to stand. Her hands had also become affected in a similar manner, the paralysis having been noticed in them about a month after it was first observed in the feet. She had had blisters and leeches to the spine, but no other treatment. For the last two weeks she had been rather improving, but was still nearly helpless.

At the time of her entrance, she presented the following appearances: Her countenance was fair, slightly pallid, in good flesh, and without decided morbid expression. She had, however, a certain air of flaccidity, or softness of tissue, which we often see in children not absolutely invalids, but which still seems not quite compatible with robust health. Her manner was depressed, timid, silent. She passed most of her time sitting upon the bed, and while in this position her feet dropped over, and inclined inward, so as nearly to rest on their inner border, apparently from paralysis of the extensors which should have supported them in an upright position. The toes also remained moderately flexed, and she could not extend them. There was much apparent laxity of the ankle joint, and the patient was incapable of moving the feet, or of supporting the weight of her body upon them. When she was lifted up in the arms of an assistant, she cried out, and drew up her feet under her body, for fear she should be made to attempt standing on them. The feet also appeared to be tender, as she cried whenever they were freely handled.

The hands were paralyzed to about the same extent as the feet. They hung down at right angles from the forearms, and could not be raised at the will of the patient. The wrist-joints looked flaccid and powerless, like the ankles. When the forearms were placed in the supine position, and then pronated, the hands dropped suddenly down into their hanging position, as if they had been attached to the forearms by hinges. The flexors seemed also to be somewhat paralyzed, but not nearly so much as the extensors, since she could take hold of a stick and pull upon it with considerable force. There was no well-marked emaciation, except of the bundle of muscles composing the ball of the thumb. These were wasted almost entirely away, so that the shape of the metacarpal bone of the thumb could be distinctly traced through the integuments.

There was no tenderness, curvature, or other morbid appearance about the spine. The skin was of natural temperature, a little dry. Pulse 140, rather feeble. Respiration quiet; appetite reported good; tongue of natural colour, clean and moist. There was a distinct dark blue line on the edges of the gums about the upper incisor teeth;—none elsewhere. The gums were otherwise quite natural. The patient complained of no pain, except when an attempt was made to move her hands or feet; she would then cry out, apparently as much from fear as from actual suffering.

On further inquiry, it appeared that, for nearly a year past, the patient had been subject to constipation and to occasional attacks of nausea and vomiting. These attacks were never very severe, and lasted usually about two days. With these exceptions her health had been good. She had never had colic at any time. Three months ago she had one of her attacks of nausea, and about the same time went to live at Charlestown, where she resided for a fortnight. She had nausea occasionally during the time, and when she returned to the city her friends first observed the weakness in her legs and feet. Since then she had often been irritable, and cried as if in pain, but had never referred her distress to any particular part of her body or limbs. Her intelligence had never been affected.

While in Charlestown, she lived at a house where the family use, for drink, "hard water" from a pump. For three weeks previously, she had lived at the "Hanover House," Hanover St., where they use spring water. For two months previous to this, she had lived at No. 21 Porter St. The only water used here is "aqueduct water," from Jamaica Pond, which is brought to the middle of the street in wooden tunnels, and thence distributed over the house through leaden pipes. While here, she was reported to have been much neglected by her parents, and often exposed to cold and wet. The family living at this house had all been well during the past year.

For six weeks previously, the patient had lived at No. 5 Medford Court, which is supplied with aqueduct water, also brought to the middle of the street in wooden tunnels, and distributed over the house through leaden pipes. Several members of this family had been repeatedly troubled, during the past year, with pain in the abdomen, sometimes accompanied with diarrhœa, sometimes not. The mother of the patient had lived with her at the above-mentioned places, and reported herself to have been quite well during that time. Since the commencement of her illness, the patient had lived at a house in Dover St., where aqueduct water is used through leaden pipes, as in Porter St., and Medford Place.

She had had no medicine during the past year, except castor oil and senna, occasionally administered by her mother.

The history and symptoms of the case were considered as indicating, in a very satisfactory manner, the poisonous influence of lead. The patient was immediately put upon house diet, and the use of the following: ℞. Acid. sulph. aromat., ʒi; sulphur. sublimat., ʒi; sirup. limonis, ℥i; mucil. gum. acac., ℥vi; M. Sumend. ʒii, ter in die. Two days afterwards she had some looseness of the bowels, with pain, and the dose was restricted to twice a-day; after which her bowels continued regular.

On the 15th, two caustic issues, each one inch long by half an inch wide, were made, one on each side of the upper cervical vertebræ. After the separation of the sloughs, the issues were kept open by dressing with ung. inf. cantharid.

Under this treatment, she soon began to improve. On the 20th of April, not quite two weeks after her entrance, the record was as follows: "Some improvement, apparently, in hands; can extend fingers, especially those of left hand, somewhat; wrist-joints, also, seem not quite so flaccid. Ankles still perfectly loose and powerless. Otherwise same. Pulse 140. Tongue and skin natural. Appetite good. Bowels regular. Blue line remains round upper front gums."

On the 27th, one week later, it had become certain that she was regaining her muscular power. The record of that date says: "Undoubted improvement in hands, and also in feet. Can extend fingers more than at last date, though this movement is still very imperfect. Wrists continue 'dropped.' Feet and ankles remain same in appearance, but patient can bear a little weight on them without complaining. A little pain in bowels once since 14th inst.; none else. No more vomiting. Always takes food with relish. Bowels open once, sometimes twice a-day. Discharges quite natural in appearance and consistency."

From that time, her improvement was constant and uniform; without any sudden alteration, or the development of any new symptom. On the 11th of May, one month after her entrance, she walked into the next ward, with only a very little assistance from the nurse; and about this time she began to be carried out into the open air whenever the weather was sufficiently mild. On the 25th of May, six weeks after her entrance, the record was as follows:—

"Is no longer confined to bed, but walks about ward most of time. Usually supports herself by placing hands against sides of room, but can walk a short distance without any support. Has improved in flesh and aspect. Manner less timid than on entrance. Pulse 108. Blue line almost gone."

During the first three weeks after her entrance she had frequent and scanty micturition; so that the nurse, as she reported, was obliged to attend to her almost every time she came into the ward. The passage of urine, however, did not at any time appear to be accompanied by pain. No systematic analysis of the secretion was resorted to, and no test was applied for lead, except the addition, on several occasions, of hydrosulphate of ammonia to the unconcentrated urine. This never produced any discoloration.

The blue line faded from the patient's gums in about the same proportion as the strength returned in her feet and hands; and her manner, which was at first depressed and timid, became gradually more confident and cheerful.

She has now so far recovered, that she walks about without assistance, quite as much as children of her age usually do; and the only remaining vestige of her paralysis, is a certain awkwardness in the movements of her feet, which, however, constantly diminishes. The tenderness of her lower extremities has nearly, though not quite, gone; and there is no trace of the blue line to be detected on her gums. The hands are still slightly emaciated.

She has continued, without alteration, the medicine which was prescribed at first; and the issues which were made soon after her entrance are still open.

The rapidity of her pulse, which was a well-marked symptom, continued for a long time.

On the 10th of April, it was 140.
" " 13th " " 140.
" " 14th " " 144.
" " 20th " " 140.
" " 27th " " 148.
" " 3d of May " 136.
" " 19th " " 120.

It is now pretty regular at 108, which, I suppose, is not a great deal too rapid for a female child, four years of age. Sometimes, however, it gets up to 120 towards night.

There are several points in the above case, which deserve particular attention. And, first, with regard to the palsy:—

1. This is generally confined to the upper extremities, and its most characteristic phenomenon is the appearance of the wrists, which hang loosely down from the forearm, and have acquired the expressive name of the "dropped wrists." Indeed, Dr. Watson would lead one to infer that the palsy from lead never affects any but the upper extremities. Pemberton, also, in his treatise on "Various Diseases of the Abdominal Viscera," mentions only the paralytic wrists, as a consequence of poisoning by lead. In the case which has been related, however, the lower extremities were paralyzed quite as much as the upper; and the affection had already existed in the former for a month, when it first appeared in the latter. The case, however, is not absolutely anomalous in this respect. It is stated, by Dr. Darwal, in the *Encyclopædia of Practical Medicine*, that lead palsy affects the "upper extremities" only, very rarely the inferior. A writer in *Tweedie's Library*, ii. 283, says: "It has been rarely observed in the inferior extremities, the hands being generally affected, though the palsy sometimes extends to the forearms. In his treatise on "Diseases of the Abdomen," in the chapter on Lead Palsy, Andral has the following sentence: "In other individuals, but much more rarely, we have ascertained the existence of complete or incomplete paraplegia, with exaltation of sensibility, and acute pains in the paralyzed limbs. In some, the upper extremities were not at all affected; in others, there was, at the same time, greater or less debility of the upper extremities." Sir George Baker, also, in an article in the third volume of the *London Medical Transactions* says: "In some patients the legs have been

paralytic for a night; and some, but not very many cases, have been remarked, in which the paralysis of the legs has been lasting."

In the case of Caroline Bright, who was in the hospital with lead palsy, in the early part of 1847, the lower extremities were partially paralyzed. The record of January 8th says: "Is not able to rise from chair; but, when up, can walk without assistance." In the case of Bridget Masterton, who was in the hospital about the same time, both upper extremities were entirely paralyzed, so that they hung down powerless by the patient's side, though she could swing them backward and forward, as if they had been attached to the shoulders by hinges. Andral mentions similar instances. "We have seen it," he says, "affect the entire upper extremities, which became altogether deprived of motion."

2. This paralysis is not accompanied by any diminution of sensibility; but, on the contrary, is particularly characterized by pain and tenderness of the paralyzed parts. The report of Bridget Masterton's case, already alluded to, is as follows: "Has much pain shooting down the limbs; never any loss of sensation in the paralyzed parts." In the case of Caroline Bright, the pain was so prominent a symptom as to lead the physician at first to overlook the paralysis, which was slight, and to diagnosticate the case as one of pure neuralgia. Andral speaks of the pain as a very important symptom. "The most common," he says, "of the nervous disturbances produced by lead, consist in pains in the extremities, and principally in the arms." "Thus we find exaltation of the normal sensibility and diminution of motion combined." He then proceeds to compare this condition of things in the arms, with that which takes place in the intestines, "where, at the same time that pain exists, there seems to be a diminution of the normal contractility of the muscular tissue."

3. Lead palsy does not usually show itself until after several attacks of colic. Pemberton gives the history of the disease as follows: "But after a person has suffered repeated attacks of this colic, he not unfrequently falls into epilepsy, or becomes paralytic in the hands." Dr. Watson, also, in describing the course of poisoning by lead, speaks of the palsy as occurring after several attacks of colic. In the above case, however, the patient had never suffered any such attack, so far as could be discovered. Nausea and constipation were her only previous symptoms referable to the action of lead. Dr. Watson, however, himself admits that, in a few instances, he has known the usual order of things reversed. "The wrists have become dropped, where there had been no preceding colic." Pereira says, also, in the article on Lead, in the first volume of his *Materia Medica:* "The palsy may occur without colic, or it may come on while the patient is suffering with it; but in general it succeeds colic." Dr. Darwal, in the *Cyclopædia of Practical Medicine,* says: "When the colic has endured for some time, and *occasionally when it has not been present,* there results a peculiar paralysis,* &c."

---

* Sir George Baker, in a paper published in the *London Medical Transactions,* 1785 speaks as follows: "It may likewise be observed, that the symptoms of this malady (lead-

4. The paralysis is accompanied by wasting of the muscles, and authors speak particularly of that bundle composing the ball of the thumb. In the above case, the atrophy of these muscles was very well marked, as has already been mentioned. I think, however, it will be found that emaciation of the hand always shows itself particularly in these muscles, whether resulting from lead or any other cause. It was at one time supposed that this atrophy was occasioned in painters by the constant pressure of the handle of the paint-brush against the ball of the thumb; but this opinion was given up after the wasting was observed to take place in the left hand equally with the right.

5. The blue line round the gums, as a symptom of poisoning by lead, was first noticed by Dr. Henry Burton, who gives an account of his discovery in a paper read before the London Medical and Chirurgical Society, in January, 1840. He reports fifty patients, who presented this symptom while under his charge, thirty-six of whom had lead colic, and the remaining fourteen were under the influence of acetate of lead given as a remedy for pulmonary disease. Many of these fourteen were watched from the time they began taking the acetate, and in two of them the blue line appeared in the course of four days, after taking one of them, fifteen grains; the other, twenty-four grains of the salt of lead. Two others, had it produced after seven days. Dr. Burton also reports a case, in which a Mr. Moyle, of Chacewater, produced the blue line in twenty-four hours by giving twenty grains of the acetate of lead in four doses. A man, by the name of Cornelius Sullivan, in the Massachusetts General Hospital in May last, had colic and the blue line produced after taking fifty-eight grains of the acetate of lead in six days.

The medicine was given as a remedy for purpura hemorrhagica with epistaxis.

Dr. Burton speaks with the greatest confidence of this symptom as a pathognomonic sign of the influence of lead. He states also that the discoloration precedes all other unequivocal symptoms produced by lead, so that it is of great value as a warning to the physician that his patient has been fairly brought under the influence of the remedy. I am informed, by Dr. Dana, of Lowell, that Dr. Burton was preceded several years in his discovery of the blue line as a symptom of lead poisoning, by Tanquerel, a Frenchman, who published an account of his observations so early as 1837 or 1838. But I have not met with Tanquerel's book, and am unable to give any account of its contents.*

---

poisoning), do not always follow each other in a regular and stated order of succession. Muscular pains in various parts of the body have tormented the patient some time previously to the attack on the stomach and bowels. It has likewise happened that the disease has first made its appearance in a paralytic condition of the wrists."

[*] This was before the publication of Dr. Dana's translation of Tanquerel's exceedingly complete and valuable treatise on "Lead Disease." Though that treatise gives the results of a much more thorough investigation than had ever been made before, I believe the views expressed in this paper, will be found generally in accordance with the statements of Tanquerel. J. C. D.

Other effects of lead had been noticed previous to the appearance of Dr. Burton's paper. Thus Christison states that the saliva is increased in quantity, and bluish in colour. Dr. A. T. Thomson also says that the saliva assumes a bluish colour. Dr. Burton, however, doubts the accuracy of these statements; for in all of his patients, who presented the blue line, the "substance of the gums, the smell of the breath, and the color and quantity of the saliva" remained the same as before its appearance. "I do not wish to assert," he says, "that salivation and turgidity of the gums are *never* produced by the internal operation of lead, but I venture to affirm that they are rare occurrences, and not characteristic of its influence."

The blue line may occupy either upper or under gums. In the case of Caroline Bright, it is reported as being "along upper and under edges of gums." Bridget Masterton had a "blue line next the teeth on under gums, and slightly on upper." In the case of Cornelius Sullivan, it appeared very distinctly on the edges of all the gums both on the upper and under jaw. In the case of Eliza T., it was confined to the edges of the gums belonging to the upper incisor teeth. It is not always easy to determine its exact situation. In Caroline Bright's case, the discoloration appeared to be seated rather on the tooth than on the gum. It has been thought by some to exist in the tartar collected around the teeth. It does exist, however, where there is no tartar. Dr. Watson relates a case in which the discoloration existed everywhere, except at those points where the teeth were wanting. In the case of Eliza T., I was able to make out, with tolerable certainty, that the blue line was situated in the substance of the thin edges of the gums. There was no tartar, and the gums were otherwise quite healthy.

Although Dr. Burton distinctly states, that the blue line precedes all other symptoms of lead, he does not say whether it remains after the other symptoms have passed off. The truth seems to be, that it is more permanent than colic, but about equally so with paralysis. It has already been mentioned, that in Eliza T.'s case, the discoloration faded from the gums in about the same proportion as the patient regained the use of her feet. In the case of Cornelius Sullivan, who had colic alone, without any paralysis, the blue line was quite distinct about the gums for a week after the pains in the abdomen were entirely relieved.

6. Another important symptom of poisoning by lead is, the depressed aspect and manner of the patient while under its influence. In the case which I have reported, there was a remarkable timidity and *shyness*, considerably greater than is usually exhibited by children of her age; and, when frightened, she did not become boisterous and noisy, as children usually do, but cried in a quiet and hesitating manner, as if she were terrified into silence. In the case of Caroline Bright, this depressed and retiring manner was equally well-marked. Dr. Christison mentions the same thing, in the article on Lead in his Dispensatory. "It thus induces," he says, "in the first instance, severe dyspepsia, with obstinate constipation and *gloominess of mind.*" He also

speaks of the palsy as being accompanied, among other symptoms, by "great lassitude, restlessness, anxiety, and gloominess of spirits." (*Christ. Dispensatory*, p. 700.) Sir George Baker also says: "Sometimes the approach of it is announced by a leucophlegmatic and yellowish complexion, restlessness of mind and body," &c. &c. (*London Medical Transactions*, vol. iii.)

So far as has yet been ascertained, the poison of lead causes no very remarkable organic lesion in the intestines or the nervous centres. Orfila relates three autopsies after death from lead colic. One of these was that of an animal, which had been confined in a warehouse of "minium," or red oxide of lead, and had died in convulsions. There was found only a "somewhat distinct" contraction of the intestines. Another, was a patient in La Charité, in whom the "whole of the colon was shrunk in diameter," but no other morbid appearance was observed. In the third case, also that of a patient at La Charité, the colon and rectum are said to have been "empty, and exceedingly contracted." Andral reports six cases, in none of which was there any sign of inflammation, as e. g., redness, thickening, or ulceration. In one of them, he says, the calibre of the digestive tube was "neither diminished nor increased." In two others, the intestines were "rather dilated than contracted;" and, in a fourth, there was "nothing remarkable in the intestines; only, in some few places, they were contracted, and slightly strangulated, but without any trace of inflammation." Autopsies of persons affected with lead palsy, have been less numerous. Andral reports two, in which the brain and spinal cord were carefully examined, without any appreciable lesion being discovered. Another of his patients died with epileptic symptoms during an attack of colic, and, in this case, the nervous centres were equally free from disease. The poison of lead acts as well on animals as on man, which is, by no means, the case with all poisonous substances. It is stated by Dr. Dana, of Lowell, (Pamphlet on Lead-pipes,) that a horse "may take daily, for weeks, several grains of arsenic without any other effect than a softer and more silky skin. Pereira (*Materia Medica*) says, that one experimenter gave tartarized antimony to a horse in so large a dose as six drachms, "without perceiving any remarkable and permanent derangement in the exercise of the principal functions." Pereira states also, that among the carnivora, generally, opium has only a very slight narcotic effect. Lead, however, appears to act as energetically on animals as on man. In *Copland's Dictionary of Medicine* (Arts and Employments), an account is given of the effects produced on cows, sheep, &c., by pasturing among the lead hills of Scotland. These effects were principally constipation, colic, and convulsions. Orfila relates a considerable number of experiments on animals, made with a view to discovering an antidote for lead. In one of these experiments, five grains of the acetate were injected into the jugular vein of a dog without any immediate effect; but on the third day, the animal became dejected; on the fourth, his movements were tortuous and difficult, and his posterior extremities were weaker than the anterior. He died on the fifth day. Unfortunately, only the lungs and stomach were examined; but these appeared uninjured.

The failure to detect lead in the urine of Eliza T., is no more than might have been anticipated from the results of previous experiments. Orfila, in the second volume of his work on "Poisons," speaks decisively on this point. "It will be in vain," he says, "in cases of colic produced by metallic effluvia, to have recourse to experiments made on the excrements and urine. Analysis proves that it is impossible in these substances to discover the lead. MM. Barruel and Merat examined the urine of a person affected with this disease. It was not at all disturbed by the addition of hydrosulphate of ammonia, and the part which subsided did not exhibit the least vestige of lead. On comparing the results with those given by the urine of a healthy person, they saw there was not the slightest difference."

The excrements were also examined for lead by the same chemists, but none was discovered. Since that time, however, Orfila is said to have detected lead in the urine of a girl who was poisoned by a large dose of the acetate. The case is reported in the *Bulletin of the Royal Society of Medicine*, at Paris, for 1840, a book which I have not been able to obtain.*

Dysuria was noticed as a well-marked symptom in the patient whose excretions were examined by Barruel and Merat. In the case of Eliza T., the nurse reported for three weeks after her entrance, frequent and scanty micturition without pain. In the case of Caroline Bright, the record says: "Urine reported natural; no dysuria, but occasionally obliged to pass it very frequently." In the case of Bridget Masterton, the urine is simply reported as "natural."

With regard to the prognosis and treatment in lead palsy, authors vary. Christison says (*Dispensatory*, p. 700), that the affection is "always very obstinate, yet, for the most part, curable under tonic treatment, graduated exercise, attention to the bowels, and avoidance of the cause of the disease." Sir George Baker speaks less encouragingly. "In this palsy," he says, "beneficial effects have in vain been expected, as well from the external application of stimulants to the part affected, as from the electric influence, however modified or directed." The bath waters, however, he thinks, have been beneficial, and he has known "more than a single instance of restoration of palsied parts after their use for several years." "Great benefit, too," he says, "has been derived from a course of warm bathing." Electricity and the warm douche are spoken of by Dr. Watson as "promising expedients."

I find in the records of the Massachusetts General Hospital, eleven undoubted cases of lead palsy, four of whom either recovered entirely, or were considerably improved; five were slightly improved, and two were discharged no better than when they entered. Three of them had already recovered from previous attacks, which had been simultaneous with an accession of colic. The two patients who recovered perfectly had neither of them had the paralysis for more than a week, and in both it accompanied an attack of colic. One of them had a warm bath daily; the other, no treatment beyond occasional cathartics.

---

* Since more thorough and delicate analytical processes have replaced the comparatively bungling methods of earlier times, lead has been more frequently detected in these cases; as by Devergie, and by Tiedemann and Gmelin. It is now, I believe, sufficiently well established that, even in cases of chronic poisoning, the lead may, sometimes, be detected, not only in the urine, but also in the blood and bile, and in some of the solid textures, as muscles, brain, liver, &c.—J. C. D.

Andral reports nine cases of palsy from lead, six of whom were either cured or much benefited while under treatment by strychnine and brucine. The others, however, experienced the specific effects of the drug without any improvement in the muscles.

On the whole, it seems to be the fact that recent cases of lead palsy, especially that accompanying colic, may recover without any other treatment than removing the patient from the influence of lead, and relieving him of his colic; but that cases of long standing are apt to be obstinate under any treatment, though still not hopeless. Avoidance of the cause of the disease seems, in fact, to be the most important and effectual of all remedies, and it is to that, more than to anything else, that I am inclined to attribute the recovery in the case which I have reported. Next come good air, good diet, and exercise in the open air. If these fail, electricity, Pemberton's splints, and strychnine would seem to be worth the trial. Sulphuric acid is entirely a theoretical remedy, but is probably harmless in itself, and indeed might be useful as a tonic, if not as an antidote. The healthy state of the brain and spinal cord in those cases which have been examined after death would not lead us to expect much benefit from counter-irritation near the spine or head.

It remains only to determine the method by which lead could have been introduced into the system in the case which I have reported;—and I think there is no reasonable doubt that this was accomplished by means of the water, conveyed through leaden pipes, which the patient was accustomed to drink. It seems remarkable that this fact, of the deleterious effect of water conveyed through leaden pipes, should so early have attracted attention, and yet should be doubted by so many intelligent persons at the present day. Vitruvius, in his work on "Architecture," condemns the use of lead pipes for conveying water, on account of the "cerusse," or carbonate of lead, which is formed in them; and Galen says, that water brought through lead pipes "makes those drinking it subject to disorders of the bowels." The subject has attracted attention at various times since then, but apparently has not even yet been definitely settled. In Kane's "Chemistry," it is stated that the impregnation of water by lead is prevented in general by the small quantities of saline matters, principally sulphates, which all ordinary spring and river waters contain. "No danger," he says, "is therefore to be apprehended from the supply of water to a city being conveyed through leaden pipes, and preserved in leaden cisterns; for *all water* of mineral origin dissolves, in filtering through layers of rocks, in its passage to the surface, a sufficiency of saline matter to serve for its protection." The most detailed examination of this subject, however, seems to be that by Dr. Christison, in his treatise on poisons. It appears from his investigations that rain water, and even the purer kinds of spring water, will dissolve lead in considerable quantities, but that a certain proportion of saline matter, held in solution, prevents the action taking place. The most efficient of these protecting salts are the phosphates and sulphates; others are less so in proportion to the solubility of the salt produced by the combination of their acid with the lead. Subsequent writers seem to have remained satisfied with these conclusions. Dr. Dana, of Lowell, in a recent pamphlet, however, has taken a different view of the matter. His attention was called to the subject by the following circumstances. For several years previously, obstinate and repeated attacks of colic had been of frequent occurrence in Lowell, often remarkably numerous and severe in particular districts, and especially in one section of the city called "Chapel Hill," and its immediate neighbourhood. Some of these cases were accompanied or followed by paralysis, as in the instance of Caroline Bright, already referred to, who had lived for some time previous to her illness in this part of the town. On inquiry, it was ascertained that nearly all the inhabitants here used lead pipe to convey well water over their houses; and that, in several instances, these pipes, when removed from the wells, were found corroded to a considerable extent. And not only so, but in some cases the owners of houses had been obliged to take up and renew their pipes, because they had actually become perforated and incapable of holding water. I have in my possession a piece of lead pipe from one of these wells, the surface of which is irregularly corroded, as if worm-eaten, over its whole extent, and at several points complete perforation has taken place. This fact, therefore, that lead pipes *are corroded and perforated* by the water of some wells, is a sufficient refutation of the theory of its protection by saline matter, however respectable may be the authority by which this theory is advanced. Neither is the fact by any means a new one, though it seems to have been for a long time practically neglected. In one of Sir Geo. Baker's earliest communications to the London College of Physicians on this subject, there is a letter from a Dr. Wall, who gives an account of a certain family in his neighbourhood, of whom the mother was paralytic, and the children all subject to disorders of the bowels. Several of the family died, and the house was sold. The next occupant found the "leaden pump" belonging to the premises in so leaky a condition, from corrosion of the lead, that it was necessary to repair it, and the pump maker who was employed said that he had several times been obliged to do the same thing, on account of the same difficulty, during the stay of the original occupants. The same thing has happened in Lowell. Mr. David Dana, the most extensive plumber in the city, states, that he "used often to be called to repair pipes which had become leaky from the action of the water perforating them."

In view of these facts, Dr. Dana examined the subject with some care. He ascertained that the natural waters of Lowell all contain saline ingredients, the most abundant of which are sulphate of iron, nitrate of lime, and chloride of sodium; and that the waters of the district called "Chapel Hill," abounded chiefly in sulphate of iron.

He concluded that, if natural waters contained only one salt, the exact proportion and protective action of which could be easily ascertained, the whole matter would be very simple;—but in point of fact, there are several salts existing together in solution in well water, very often in company with vegetable acids; and that these act on each other, and modify each other's action on the lead.

The dangerous results liable to ensue from this mutual action are principally threefold.

I. The production of chloride of lead, which is soluble in water.

II. The production of nitric acid, which readily dissolves lead, &c.

III. The production of carbonate of lead, which, though insoluble, is liable to be introduced into the system in a state of suspension, and is, therefore, nearly or quite as dangerous as if soluble.

There still remain two objections to the supposition that, in the case of Eliza T., the poison was introduced into the system in water conveyed through lead pipes. The first is, that an interval of five weeks took place between her being exposed to the influence of lead water, and the first appearance of paralytic symptoms. The second is, that none of her family were similarly affected. In answer to the first objection it may be stated, that the constipation and occasional nausea continued up to the time of the paralysis, showing that the constitution was under the influence of lead. Paralysis, however, may be produced after an interval of time without any intervening symptoms, as appears from a case referred to in the first volume of *Pereira's Materia Medica* (art. Acetate of Lead). "This patient, a boy, fifteen years of age, took from a quarter of a grain to two grains four times a day, till he had taken 130 grains, without any ill effect. A month after, he was seized with colic, which was followed by paralysis and death."

The second objection, viz., that none of her family were similarly affected, is one very frequently urged, not only by the vulgar, but also by medical men. In Lowell, it was found to be generally difficult, and often impossible to convince people of the danger of using lead pipes for conveying water on this very account, because all the inhabitants of a district did not feel the poisonous influence in an equal degree. In the case of Eliza T., when it was first suggested to the physician who had had charge of her, that she might have been poisoned by lead in the aqueduct water, he remarked, that "that was impossible, since she was the only one of the family who had been paralytic." But it would certainly be surprising, if the poison of lead were the only one whose action was not modified by particular idiosyncrasies. There are a sufficient number of instances on record, to prove that the energy of its action varies greatly with different individuals. Dr. Watson states, that "persons have been known to suffer colica pictonum, in consequence of their sleeping for a night or two in a recently painted room." On the other hand, he has himself "seen a patient, who became affected with the disease for the first time after working in white lead for nineteen years." In Dr. Burton's report of his observations on the blue line, he remarks particularly on this modifying influence of idiosyncrasy. "For some of my patients," he says, "were much more obnoxious to its influence than others, under circumstances apparently similar." It will be remembered that the little girl, Eliza T., was very young, and had been, at one time, much exposed to the unfavourable influences of cold and moisture. This may, perhaps, have had some influence in making her more sensitive than others to the poisonous effects of lead.

ART. V.—*A Detail of certain Experiments, performed by Magendie and Bernard, in the College of France.* By WILLIAM H. ANDERSON, M. D., of Mobile, Alabama.

IN the winter of 1848, the writer of this article witnessed a large number of experiments, vivisections, &c., made by Magendie and Bernard, for the purpose of elucidating some of the more mysterious functions of the digestive, nervous, circulatory, and respiratory apparatus. Among others, a series of experiments was instituted, to ascertain the action of various poisons, the therapeutical effects of which have been much sought after of late years. We proceed to detail the facts relative to several of these medicaments.

Strychnia.—Of all the extracts, the alcoholic is undoubtedly the best, but even this is uncertain, and should be administered with caution. The great difficulty seems to be in arriving at a proper strength; for two preparations made precisely in the same manner, are frequently found to possess different degrees of activity. Trousseau was the first to remark this, in the case of a patient under his care at hospital Neckar. To obviate the difficulty, the alkaloid should always be given in substance, and the same rule holds good with regard to all the powerful alkaloids.

Strychnine is a very active substance, and when given in poisonous doses, either to man or the lower animals, it produces death by convulsions. Hence, it bears especially upon the nervous system. It has no action on the brain, and produces its effects equally as well when this organ has been extirpated. To prove this, Magendie removed the brain of several animals, and the administration of the poison was followed by the same effects. A careful analysis of the experiments of Bernard and Magendie leads to the belief that strychnine has a reflex action; that it acts on the periphery, not on the nervous centres. An exaggeration of the reflex action, therefore, is its true modus operandi. Its peculiar action seems to be on the nerves of motion, yet to act on them requires the integrity of the posterior roots. Bernard exposed the *anterior* roots of the nerves going to a limb; he then cut the *posterior* roots, and applied the alkaloid to the anterior; no convulsion ensued; but by applying it to the posterior roots in a state of integrity, convulsions in the limb soon followed. The nerves of motion therefore became affected through the medium of the nerves of sensation.

However applied, strychnine cannot act before absorption takes place. When introduced into the veins, the effects are immediately seen. When it was placed in the cellular tissue of the foot, and the vessels between it and the heart tied, no action ensued. Some of the German therapeutists thought that when strychnine produced death, it did so by asphyxia, but this theory is disproved by the fact, that it kills animals that have no lungs. The true method of its action in *poisonous* doses is an exhaustion (*épuisement*) of the nervous system.

Nicotine.—The Virginia and the Cuba tobaccos are very rich in this principle, though both are inferior to that which grows in the south of France. There are various agents for the extraction of nicotine from the nicotiana tabacum, but ammonia is perhaps the best. When obtained in its pure state, nicotine is a liquid, slightly yellowish, and without odour. The works on materia medica generally attribute to it the odour of tobacco, but this is owing to a faulty manner of preparing it. When entirely deprived of the potash, which is in intimate association with it, it is quite free from odour; but, on the addition of the smallest portion of potash, the pungent odour of tobacco is immediately evolved. Nicotine is very volatile, very easily absorbed, and exceedingly energetic in its effects on the system. While its power bears principally upon the brain and spinal cord, it is at the same time an active purgative and diuretic. Almost all of the new comers in tobacco factories are lightly purged for several days, and even children, nursed by mothers who have lately become operatives, suffer from diarrhœa.

One drop of pure nicotine, given to a medium-sized dog, is followed by convulsions in all the limbs,—the forelegs suffering much more, however, than the hinder ones,—the respiration is very much quickened, and the heart's action accelerated. The eyes sink, and the animal becomes temporarily blind, owing to the third eyelid spreading itself over the eye. The blindness is not owing to any lesion of the optic nerve, as has been supposed. In addition to these effects, there are profuse salivation, an exaggerated secretion of urine, and active purging. In the course of an hour the violence of the effects passes off, and the animal calms—the posterior limbs yield their convulsions some time before the anterior. The next day, the dog entirely recovers. The post-mortem examination of animals killed by the introduction of nicotine into a wound, reveals nothing that will account for the symptoms. Bernard cut the pneumogastrics of a dog that had taken a poisonous dose, and the usual phenomena produced by it on the lungs and heart did not evince themselves. Death, however, occurred as quickly as if the nerves had not been cut.

Prussic Acid.—The action of this poison is rapid and energetic, absorption taking place the instant that it is applied to a proper surface. One drop of the anhydrous acid is sufficient to kill a middle-sized dog. As soon as the poison is absorbed, a slight tremulous motion takes place throughout the system; this soon increases to actual convulsion, which becomes more and more intense, until death closes the scene. While Bernard was preparing some of the anhydrous acid for experiment, he inhaled some of the fumes, and was immediately rendered senseless, with extreme difficulty of breathing. Several hours elapsed before he entirely recovered. A series of experiments was undertaken on a number of animals, in order to find out a counterpoison for such a destructive agent, and they resulted in the discovery that ether (sulphuric) was the best antidote, if immediately inhaled. In the course of the experiments, it was hoped that ether, largely taken, would prove to be an effectual antidote to a very large quantity of the anhydrous acid, for it was found that several animals revived, which had been previously etherized, although several drops of the poison had been administered. Subsequent experiments, however, proved that the dose must be within certain limits.

Prussic acid acts on the system of sensibility as well as that of movement, and its effects commencing in the cerebro-spinal axis are diffused throughout the body by means of the nerves. If the nerves going to a limb are cut, that member will not evince the phenomena shown by the others,—there will be no tremor or convulsions in it.

In addition to its powerful effects on the nervous system, Prussic acid has a peculiar action on the blood, so modifying that fluid as to render it incapable of oxidation. The bright red colour of arterial blood is owing to the absorption of oxygen. In *man*, this absorption takes place in the lungs, but in some of the lower animals, it is performed by means of the skin, and it may easily be seen going on, if the mesentery of a cat or a rabbit be exposed. The iron of the globules is the constituent that becomes oxidized, and Prussic acid has the power of preventing it from appropriating oxygen. A very feeble dose will, in a measure, put a stop to the process. This phenomenon presents itself out of the body, in the same manner that it does in the current of the circulation. Bernard took two tubes, into each of which he put a quantity of blood. Oxidation immediately commenced, but on the addition of a few drops of Prussic acid into one of the tubes, the process of oxidation was immediately arrested. What influence this property has in producing death is a subject well worthy of consideration. That the functional integrity of the cerebro-spinal axis depends upon a proper supply of arterial blood, there is no question. Either too much or too little oxygen in the blood impairs the action of this system; and it is the opinion of the author, deduced from witnessing many experiments with Prussic acid, that the beneficial effect of medicinal doses is often owing to its property of checking undue oxidation of the blood.

In various diseases, accompanied with accelerated respiration and exalted arterial action, there is reason for believing that the blood is overloaded with oxygen; and it is a fact worthy of notice that, in these very diseases, medicinal doses of Prussic acid exert a very salutary effect. As it is intended, however, merely to detail the experiments, and the well-ascertained facts that flowed from them, we will not speculate farther on this subject.

Among the preparations of cyanogen, the cyanuret of mercury is, perhaps, the most dangerous. If there be the smallest quantity of gastric juice in the stomach, death immediately ensues its administration. The gastric juice decomposes the compound, and liberates the Prussic acid in its purest form. Bernard introduced into the stomach of a dog, during digestion, a small portion of the cyanuret, and the animal died, in a few minutes, with all the symptoms of death by a poisonous dose of Prussic acid. On an immediate post-mortem examination, both the stomach and the brain emitted the characteristic odour of the acid.

If, from any cause, sulphuric ether cannot be obtained for inhalation, when a person has been poisoned with Prussic acid, the next best antidote is a solution of carbonate of potash, followed by a solution of the sulphate of the protoxide and the peroxide of iron. The chemical interchange of elements is very rapid, and results in the formation of the ferrocyanuret of iron.

Opium.—The experiments performed by Magendie and Bernard on opium, lead to the belief that it acts primitively on the muscular system, and that its energy as a poison, in any given case, depends on the degree of muscular paralysis it has produced. Its therapeutic effects, in small doses, are very variable, and depend upon age, idiosyncrasy, habit, and particular conditions of the body. Long-continued usage of the drug may so inure the system to its influence, that very large doses may be taken with impunity, so far as regards their immediate effect. The poison, however, is slowly doing its mischief, and sooner or later the tone of the muscular fibre becomes impaired, and the heart, losing its wonted vigour, is unable to drive the blood with sufficient force to reach the capillary tubes. Hence, congestion of the brain and a general stasis of the blood, are the constant effects of a poisonous dose of the medicine. If the heart did not partake of the languor of the muscular system, opium would perhaps not be so great a poison; but this organ, like the rest of the muscles, loses its contractility, and labours in vain to perform its functions.

Opium is one of those substances that act through the vascular system. It may be applied in a very concentrated form to a wound in a limb, and yet, if the vascular communication between the limb and trunk be cut off, no effect is produced. This has been proved by repeated experiment.

Want of vigour in the action of the heart, being the great danger in poisoning by opium, it would be natural to suppose that any substance having power to restore that vigour, would be a good antidote to a poisonous dose. And this is precisely what turns out to be the case with regard to coffee. Of all known substances, coffee has the most influence in giving power to the heart's action; and it is in this way, establishing, as it were, the impeded circulation, that coffee is the best and most certain antidote to opium.

Digitalis.—There are several medicines which seem to have a double action on the system, that is, which have two distinct and separate actions, the one not being the consequence of the other, although it may follow it. Digitalis belongs to this class, since it contains two distinct principles—a sedative, and a diuretic. Its diuretic property is independent of the heart's action, for it may be combined with medicines which annul its sedative effects, and still the kidneys will manifestly be under its influence. Chemistry has not as yet succeeded in isolating these principles from each other.

Digitalis is a sedative, because it weakens the muscular system of organic life. If the abdominal cavity of an animal be opened, and the intestines exposed, after a sufficient quantity of digitalis has been administered, the heart's action will grow weaker and weaker, and the intestinal motion will gradually lessen until both will cease. This arrest of intestinal motion is not owing to debilitated circulation, because, while under the depressing influence of the digitalis, the heart's action may be easily strengthened by the administration of coffee, but the muscular coat of the intestines will remain unaffected, and continue to become enfeebled till it stops altogether. An experiment, verifying the above, may be easily performed on a dog of medium size, by dissolving in the serum of the blood one grain of *digitalin*, and injecting it into a vein. Digitalis acts through the vascular system, not the nervous. Bernard cut the pneumogastrics of a dog, and still it had its usual effects on the heart. The narcotic action of the drug, and the coma and convulsions that precede death, when it has accumulated in the system, are owing to deranged circulation in the brain.

Quinine.—The administration of this substance, in very large doses, is followed by coma, convulsions, dilatation of the pupil, and other symptoms denoting derangement of the brain. When death is produced, the autopsy reveals a good deal of irritation of the mucus membrane of the stomach. The blood is black, and not coagulable;—extravasation is found in various parts of the body; the brain is invariably congested, and the lungs much carnified.

Forty grains, given to a large dog, produce very serious effects, but do not in general kill the animal. At the end of two or three days, during which period he suffers much with coma, tremors, and convulsions, he recovers, but almost always there is paralysis in some part of the body, either in the hindfoot, the foreleg, or some part of the face.

In medicinal doses, quinine has a decided action on the heart; that is, if the subject be in a state of health. Ten grains, dissolved in acidulated water, and injected into the crural vein of a dog, produced an increase of the heart's action, both in force and frequency, and was followed by intense fever for several hours. The spleen being exposed to view, was closely observed, but there was no reduction in its size. In this particular, quinine differs from strychnine, the latter producing a marked decrease in the size of the spleen. An enlarged and unhealthy spleen, however, seems readily to come under the influence of proper doses of quinine. This is proved by experiments on the lower animals, as well as by those performed on man. The surgeons of the French army in Africa report that, in the malarious districts of that country, it is by no means uncommon for dogs to have their spleens much enlarged, and that they are easily reduced by the administration of medicinal doses of quinine.

Quinine is administered by the stomach, by enema, by the endermic method (either on a denuded surface, or by the general bath), and by injection into a vein. Of these various modes, that by injection into a vein is the most efficacious. Ten grains, put into a vein, will have the effect of a much larger dose put into the stomach. When given by the stomach, it should always be administered in the state of fasting, the state of digestion greatly lessening its energy. It has been mentioned that quinine, in small doses, has a decided action on the heart, increasing its force and frequency and producing general fever. This is the case when it is administered in a state of health, and when so taken, the fever lasts as long as the medicine is in the current of the circulation. This is from three to five hours, at the end of which period it is eliminated by the urine, and the fever subsides. That depression of the vital power, which immediately precedes and accompanies ague, will rarely take place, when there is a sufficient quantity of quinine in the current of the circulation at the moment of its invasion; and it is for this reason that the remedy, when administered as an antiperiodic, is much more efficacious, and much more certain in its effect, if the quantity be taken three or four hours before the expected chill, than if the same quantity be taken in smaller doses during a period of eight or nine hours before, because, if there is any secretion of urine going on, a large portion will in this latter case have been eliminated from the system.

[A knowledge of the above fact, will have some practical bearing on the diseases of southern latitudes, since it often happens that the important effects of quinine (at times *vitally* important) are lost to the patient because the medicine is not in his system at the proper moment. We take advantage of this opportunity to make a few remarks with regard to the injection of quinine into the veins. We have frequently seen cases of congestive and bilious remittent fever, where we had every reason to believe that quinine was strongly indicated; but where, for substantial reasons, it could either be not given at all, or, if given, would have been devoid of effect. Among such cases are those where the medicine is ejected, in consequence of an irritable stomach, and also those where the patient apparently, though not really moribund, can no longer swallow. In these cases, it is usual to administer the medicine either by the rectum or by the endermic method; but when the depression of the system is very great, and the vital action almost extinct, the *absorbent* power is in a great measure lost, and the good effects of the remedy are not experienced, because it lies like an inert mass in the system. At this period, the circulation of the blood still goes on, and, though partaking of the general impairment of the system, it is feeble and languid; yet still it reaches the nervous centres, and can convey to them materials capable of restoring and renewing their vigour. How often does it happen that, in the low stage we have described, the return of a slight chill will cause a congestion of the brain and lungs, and inevitably carry the patient to his grave; and with what anxiety do we look forward to the period of this return, hoping that it may be escaped or kept off by the intervention of art. If quinine, therefore, be an efficacious remedy; if it have the power of bracing up the nervous system, and preventing another agitation, and the fatal stasis consequent upon it, it is all important that it should, at such times, be put in the current of the circulation. In this country, the administration of quinine by transfusion has been little, if at all, used; but in Belgium and Holland, we have known it employed with the happiest effect; and since the process is easy and perfectly innocuous, we think it well worthy an extended trial. There are liquids which cannot with safety be injected into the veins, because the globules of such liquids are too large to pass the minute capillaries of the lungs. The due oxygenation of the blood is thus interfered with, and death is the consequence. But water does not belong to this class. At the temperature of the blood, it passes freely from the arterial to the venous capillaries, as is perfectly safe as the vehicle of medicines which are to be used by transfusion.

The injection of certain medicines into the veins was used in England and Germany some years ago; but it fell into disuse, because a German physiologist of distinction, making use of *oil* as the solvent of some remedy he wished to employ, invariably caused the death of his patient. The experiment (using oil as the solvent) was extensively tried on animals, and always with the same consequences. The true cause of death was sought for in vain, and it was reserved for the untiring industry of Magendie to discover it. The experiment that ascertained and proved this, was repeated in the presence of the writer, and it was found that the cause of death was a mechanical obstruction of the capillaries of the lungs. The globules of the oil being too large to pass, completely plugged up the finer tubes, and prevented the access of air to the blood. This fact being known, the method by transfusion will doubtless be again brought into use.]

Note.—During our absence from the United States, an interesting paper on the effects of quinine, in poisonous doses, was published in the *American Journal of the Medical Sciences*, April, 1847, by Dr. Baldwin, of Montgomery, Alabama. We have received this article, and for our experience relative to the various susceptibility of different individuals to quinine (both of the human species, and the lower animals), we must refer to it. We are pleased to say that the experiments of the French physiologists generally confirm those of Dr. Baldwin, at least so far as the symptoms and lesions are concerned which poisonous doses produce on dogs. These various effects having been given to the profession, in the paper of Dr. B., it is unnecessary for us to repeat them in this article. With regard to the relative susceptibility of the system to the influence of quinine when *injected into a vein,* and when given by the *stomach,* the French authorities differ from Dr. Baldwin; but it is highly probable that the latter did not perform a very large number of experiments to ascertain this fact particularly. In connection with the paper of Dr. Baldwin, we would state that the best antidote to the state of *quininism,* is an active and efficient diuretic. Under the action of the acetate of potash, combined with a very small portion of Prussic acid, we have seen patients rapidly recover from the poisonous effects of quinine.

Arsenic.—With regard to this substance, we have very little to say. Experiment proves that, however introduced into the system, whether by the stomach, through a wound, by inhalation, or in a state of gas, it always causes inflammation of the stomach, accompanied by some nervous and cerebral agitation. There are two peculiarities about arsenic, worthy of notice. The first is, the extreme slowness and great difficulty with which it is eliminated from the system. It rests a long time in the economy, and may occasionally be found in the blood after all symptoms of poisoning are gone. Its action on the blood is to render it black, to diminish its plasticity, and to make it very fluid. The consequence of all this is an infiltration of the tissues, and slight effusions of blood, particularly in the lungs; the latter are always found when animals have been poisoned by arsenic. Another striking peculiarity of arsenic is, its manifest affinity for the tissue of the liver. No matter how introduced, or how feeble the dose, if death ensues, arsenic may always be found in the liver. Even when time, or the intervention of art, has caused it to be eliminated from all other parts of the system, the liver will still be found to contain a sufficient quantity for the appropriate test to act upon. So true is this, that when a person is poisoned, in the provinces of France, they send only the liver to Paris for examination.

When arsenic is eliminated from the system, it goes off by the urine; and the iodide of potash is, perhaps, the best substance to expel it through that channel.

Ether.—The wonderful effects of ether upon the human economy, and the new era which its introduction caused in operative surgery, were sufficient inducements to submit it to the test of very varied, and often-repeated experiments. Not only did Magendie and Bernard undertake a rigid analysis of its effects on animal life, but Flourens, Longet, Beau, and a host of other distinguished physiologists, turned their attention to the subject, and illustrated, as far as possible, its mysterious agency in the production of anæsthesia. While these celebrated experimenters were observing the effects of ether on the lower animals, an equal number of the most enlightened practical surgeons were closely watching its action on the human system, and so fashionable had its employment at one time become in France, that even an abscess was scarcely ever opened by surgical intervention, unless the sensation of the patient had previously been lulled by the inhalation of the anæsthetic agent.

For the production of anæsthesia, the chlorohydric and acetic ethers are equally as efficacious as the sulphuric; but the latter, being in more general use, was chosen as the most proper variety for experiment. Sulphuric ether, applied locally, acts as an irritant and refrigerant, and to some of the animal tissues it acts as a solvent. When applied to the trunk of a nerve, it destroys the sensibility of that nerve. This it does by its refrigerant effect, ice possessing the property of doing the same thing; but ether goes further than ice; it dissolves the fatty matter of that part of the nerve, and paralysis follows as a consequence. When ether is applied to a muscle, it produces a kind of spasmodic separation (*écartement*) of its fibres, which is, perhaps, owing to its refrigerant effect on the nervous fibrils supplying the muscles.

When inhaled, ether is absorbed by the blood with astonishing rapidity, and when absorbed in sufficient quantity, produces a loss of sensibility, both general and special, a temporary change in the blood, and a general relaxation of the muscles of animal life. There are several degrees of etherization. In the first, the periphery alone of the nervous system loses its sensation; in the second, the nervous centres are taken; in the third, death is produced. The loss of sensation always retires from the periphery to the centre. Bernard exposed a part of the spinal column of an animal, so that he could freely get access to the anterior and the posterior roots of the nerves. Ether was then administered, and when the periphery was completely devoid of sensation, both the anterior and the posterior roots were still quite sensible; by continuing the administration of the ether, however, the roots lost their sensation, and the brain and spine came under its influence. The anterior roots first became insensible, thus beautifully corroborating the doctrine of recurrent sensibility. Beau performed the same experiments, and was induced to believe that there was in the skin a sensation of *touch*, and another of *pain*. This doctrine, too, seems to gain plausibility from a fact which we have often witnessed, viz., that a patient may be undergoing an amputation, and may feel distinctly that something is being done to the member, and yet not suffer the slightest pain from the strokes of the knife. His intellect, in the mean time, though somewhat clouded, retains integrity enough to recollect and appreciate remarks made by the surgeon and the bystanders.

Ether, to a certain extent, changes the colour of the blood. At first, little or no difference in colour is perceived; but by degrees, when the excitation goes off, the patient becomes pale, and the blood assumes a dark-reddish hue; both veins and arteries contain blood of the same colour. When etherization is pushed to extreme, blood passes freely into the chyliferous ducts, and the lymph and chyle are found to be of the same colour as the blood. At this period the lungs become congested, and death soon supervenes. It is an error here to say, that the patient dies by asphyxia, because the blood does not become black, nor does it lose its property of coagulation; indeed, after death by etherization, the blood coagulates very rapidly.

The anæsthetic agents, may be used with impunity, to mitigate the pains of childbirth; and, if employed with judgment, no ill effects need be apprehended for either mother or child. We have often seen women in labour submitted to their influence, and while they produced annihilation of the sensation of pain, and sometimes occasioned profound sleep, the muscles of the interior retained their accustomed energy, and both heart and uterus contracted well. It will be seen that the effects of ether, in these instances, are just the reverse of those of digitalis.

In closing this article upon ether (and most of the arguments will apply equally well to chloroform), we may take occasion to state, that we have seen it often administered to the lower animals, and to the human subject certainly not less than several thousand times. We have seen every age, sex, and condition under its influence—from the octogenarian, at the Salpétrière, to the infant suckling at the foundling hospital. During the late revolutions in France and Germany, we saw it used on the wounded, under every variety of temperament and constitution—the athletic grenadier, in the full glow of health, subjected to its influence for the mere extraction of a splinter, and the broken-down pauper submitted to its agency, when life was almost extinct from the prostrating shock of a severe gunshot wound. With such experience, we can truly say that the cases in which it did harm, were too few to be taken into serious consideration. That death, in one or two instances, did follow, we cannot deny; but certain it is, we have never seen death occasioned by ether or chloroform, when they were administered with a due proportion of atmospheric air. It is not to be wondered at, that a patient should occasionally succumb to their influence, when they are suddenly thrown into the lungs, without any admixture of atmospheric air; but such fatal cases are no more argument against their employment, than are those *rare* cases against ablution, in which the patient, suddenly plunged into a very cold bath, never recovered from the shock.

MOBILE, *July*, 1849.

ART. VI.—*History of Two Cases of Aneurism, treated in the Pennsylvania Hospital.* By GEORGE FOX, M. D., one of the Surgeons.

CASE I.—*Inguinal Aneurism; compression—failure—ligature to the external iliac artery—cure.*—James Sparks, æt. 24, married a native of Ireland, and by trade a weaver, was admitted into the hospital, August 29th, 1848, with an aneurismal tumour in the right groin. He is a slender, delicate-looking man, much reduced, and evidently suffering greatly; walks with much difficulty, being obliged to raise his limb with his hands. The history given of his case is that, about the middle of May last, having been engaged for some time previously in labouring work (digging, &c.), upon a farm, to which he had been unaccustomed, he first noticed a small swelling in his groin; not experiencing any particular inconvenience from it, he paid but little attention to it for about two months, when, finding it was increasing rapidly, he consulted a physician, and, by his advice, *under the impression it was an abscess*, poultices were applied, and opening it with a lancet proposed; fortunately, however, this was not done; he came to the city, and applied for admission into the hospital.

At this time, the tumour extended about an inch and a half above Poupart's ligament (pushing this upwards and forwards), and nearly four inches below it; pulsation strong, with the peculiar aneurismal thrill very distinctly marked; upon pressure, the whole sac could be emptied; it was, however, so tender and painful that an examination could hardly be borne.

Perfect rest in the recumbent position, and a restricted diet, were ordered for the present.

Finding, in our examinations of this case, that the circulation in the tumour and limb could be completely controlled by pressure upon the external iliac artery, we believed ourselves justified, prior to the performance of the operation, customary in such cases, to endeavour to effect a cure by means of compression applied to the artery above the tumour, upon the plan recommended by Dr. Bellingham, of Dublin, and others, although by no means sanguine of success, from the unfavourable situation of the disease, and the anticipated difficulty of properly adapting the instruments and continuing the pressure by these, or other means, sufficiently long.

The ingenious method pursued by Professor Knight, of New Haven, in the case narrated by him (see Number of this Journal for July, 1848, p. 255), seemed to us well adapted to the present one. Accordingly, several gentlemen of the medical class, in attendance upon the hospital, having kindly offered their services, at a quarter before six, in the afternoon of Saturday, Sept. 2d (having previously emptied the bowels by an enema), we commenced manual pressure, applied to the external iliac above the tumour; the assistants were divided into relays, each gentleman to be relieved every half hour.

12 o'clock, *Midnight.* No difficulty is experienced in controlling the circulation in the tumour, and very little pain or inconvenience to the patient; the temperature of the limb, especially that of the knee and foot, is much diminished; he is directed, if restless, a drachm of the solution of morphia (gr. j. to ℥j), to be repeated, if requisite, every three hours.

3*d.* 7 A. M. Suffered very little during the night; took one dose of the solution of morphia; the temperature of the limb more natural; the tumour is smaller, harder, and decidedly less painful; the urine is drawn off by the catheter.

4*th.* The only complaint made, is at the time of changing assistants; continue treatment.

5*th,* 6 P. M. Pressure has been kept up continuously; the temperature of the limb is rather less than natural; the pulsation in the aneurismal tumour is decidedly diminished in force, all pain and tenderness upon handling it has passed off, and the tolerance of pressure improves; but, in consequence of the difficulty in procuring assistants, their duties being exceedingly irksome and fatiguing, I now applied a hoop tourniquet, making pressure at the same point.

8 o'clock, P. M. The instrument was well borne for the first half hour; we are now obliged to remove it, in consequence of the severe pain and suffering it produces, which may, in part, be owing to its not fitting as well as we desired. We again resorted to manual pressure.

6*th*, 5 P. M. All the assistants being tired out, we discontinued manual pressure, which had been kept up nearly four days and nights, and succeeded in adapting the hoop tourniquet, so as to control the circulation without producing pain.

7*th*. In the afternoon, upon adapting the instrument, the cuticle is found to be slightly abraded, and the skin looks bad, though no complaint of pain is made; a soap plaster is applied under the pad of the instrument, and an effort made to shift the point of pressure.

8*th*. Rested well; appears comfortable; the skin under the pad looks better.

14*th*. We are obliged to remove the instrument, in consequence of the difficulty of avoiding a slough produced by the pressure, which has been noticed for some days. The tumour is harder, firmer, and much diminished in size, the pulsation in it much less strong, in fact, none can be perceived when the limb is fully extended; we regret much the necessity of abandoning this method of treatment, as we believe it has been productive of positive and decided good; undoubtedly, the collateral circulation will be more readily and rapidly effected after ligature of the artery, and thus, one of the great dangers of the operation avoided.

25*th*. Slough has separated, excepting a small portion in the centre; the pulsation in the tumour is again strong.

Oct. 11*th*, 11½ A. M. In the presence of my colleagues, a number of medical friends, and the medical class, I applied a ligature to the external iliac artery. The incision was commenced just below, and three-fourths of an inch within the anterior superior spinous process of the ileum; it extended to about one and a half inches of the symphysis pubis, and was semilunar in shape. We then successively divided the integuments, fascia, and external oblique muscle, and, passing under the internal oblique and transversalis muscles, divided that portion of these muscles which arises from Poupart's ligament, also the fascia transversalis; the cellular tissue, &c., were next carefully separated till the artery was reached. I then passed a ligature under it with the needle of Professor Gibson, from within outwards; after my colleagues were fully satisfied, the ligature was tightened, and tied with a double knot—all pulsation in the tumour ceased immediately. The external incision was now brought together with one suture, and adhesive strips, and a compress of lint, wet with cold water, applied; the patient was then removed into the ward, and placed in bed with his limb enveloped in flannel, and bottles of hot water applied to his foot; the time occupied in the operation was sixteen minutes. Diet to be restrained to gruel and barley water.

1 P. M. Leg and foot cold.

3 P. M. Ordered a teaspoonful of the solution of morphia.

6½ P. M. Temperature of limb nearly natural; pulse 110; he makes no complaint; there is slight tenderness upon pressure of the abdomen, especially of the right side; coughing also gives some pain; directed another dose of the solution of morphia, and to be repeated through the night, if required.

12*th*, 11 A. M. Slept about half the night; pulse 132; skin hot, tongue furred; vomited once during the night; countenance anxious, tenderness as last evening; ordered a tablespoonful of neutral mixture every two hours, and a pill containing calomel, gr. one-twelfth, pulv. Doveri, gr. j, every alternate hour.

5 P. M. Pulse 130; skin warm, no pain; coughing does not produce any pulsation in popliteal artery; continue treatment.

13*th.* Vomited once last night, which he attributes to the medicine; slept well; countenance less anxious; pulse 130; skin warm, very little tenderness upon pressure; slight discharge of pus from incision; the temperature of the limb rather less than that of the other; it is still enveloped in flannel.

6 P. M. Pulse 120, free from pain or tenderness; the temperature of limbs the same; pulsation in popliteal artery very perceptible.

14*th.* Slept well, without an opiate; pulse 112; skin pleasant; no tenderness, except near the incision; suppuration quite free.

15*th,* 3 P. M. Comfortable; pulse 108; bowels were opened last evening by an enema, the first time since the operation; discontinue medicines, and substitute pulv. Doveri, gr. v, three times a day.

17*th.* Doing well; pulse 104; suppuration from wound free and healthy.

18*th.* Upon removing the dressings, in the presence of the class, we noticed a small, dark-coloured vesicle at the bottom of the ulcer, caused by the compression, from which pretty soon commenced an oozing of dark, thick blood, evidently coming from the sac, as this diminished in size as the blood flowed; about three ounces were discharged.

6 P M. Very little discharge from sac since morning.

20*th.* Pulse 100; wound cicatrizing; very little suppuration, except about the ligature; oozing from the sac of the same kind of black blood continues, though small in quantity; bowels were open naturally.

22*d.* Doing well; discontinue Dover's powders; diet improved.

24*th.* Wound nearly cicatrized; pulse 100; appetite good; is cheerful, though he complains of pain shooting from the tumour down the thigh so great as to have prevented his sleeping during the night; the discharge from the sac is very small in quantity; ordered Dover's powder, gr. iiss three times a day.

25*th.* Slept better; less pain; discharge from sac continues slight; bowels are open daily.

27*th.* About midnight, the discharge from the sac was so great as to require the application of a bandage and compress, which arrested it; there is slight diarrhœa, for which he is directed a teaspoonful of paregoric, to be repeated if requisite.

Evening. Upon removing the bandage, there was considerable discharge of the same kind of dark, black blood. We find the ulcer looks livid and unhealthy; reapplied compress and bandage.

28*th.* Pulse 108; slight diarrhœa; ligature came away this morning, being the seventeenth day; oozing from the sac nearly ceased, not requiring the continuance of compression; ordered an enema of thin starch and laudanum.

29*th.* Oozing from sac slight; bowels still loose; repeat the enema.

30*th.* Doing well; bowels not open; oozing nearly ceased.

November 1*st.* Pulse 104; slept well; discharge from sac again increased; a mixture of blood and pus.

2*d.* Dressings soaked with the discharge of the same character; the tumour has nearly disappeared.

4*th.* Ulcer has a more healthy appearance; the discharge of blood and pus continues, though less in quantity.

Evening. Half a pint of bloody purulent matter gushed from the sac while dressing this evening.

5th. Discharge slight.

7th. Ulcer cicatrizing; another gush of bloody purulent matter.

10th. Complains of soreness about the tumour; the discharge slight.

11th. Half a pint of the same kind of discharge from the sac.

12th. Appears to be very weak; pulse feeble; perspiration last night profuse; ordered a wineglassful of the infusion of Prunus Virginiana, three times a day, and a half bottle of porter daily.

14th. Better; sweating ceased; discharge trifling.

15th. A large purulent discharge without any blood.

18th. Purulent discharge large in quantity; has continued till this morning; there is now none.

20th. Wound rapidly cicatrizing; the discharge from the sac is very slight.

23d. Purulent discharge from sac nearly ceased; he is allowed to get up.

25th. Slight serous discharge from sac; walks with crutches; can put his foot to the floor.

December 4th. Wound and ulcer cicatrized; no discharge from the sac since the 30th ult.

21st. Left the hospital well.

July 4th, 1849. Sparks visited us to-day; he is perfectly well; says he can run and jump as well as ever; he experiences no inconvenience whatever from the disease or operation.

CASE II. *Carotid Aneurism; Ligature of the Primitive Carotid below the Omohyoid Muscle.*—Francis Wright, coloured, æt. forty-one, native of this country, coachman, was admitted into the hospital October 12th, 1848, with an aneurism of the right carotid artery. About four months since, he noticed a small tumour on the side of his neck, just below the angle of the lower jaw, which has recently been increasing rapidly, and is now three and a half inches in length by two and a half in breadth, extending down the neck to within about an inch and a half of the clavicle; it is exceedingly tender and painful; pulsation strong, with the aneurismal thrill well marked. His head is inclined to the right side; countenance expressive of suffering; unable to open his mouth without difficulty; the secretion of saliva is so profuse, he is incessantly endeavouring to expel it.

No doubt existing in the minds of my colleagues, or myself, as to the true nature of the affection (*though this had also been pronounced an abscess*), we determined to tie the primitive carotid. Accordingly, on the 21st, at 11½ A. M., in the presence of my colleagues, and the medical class, the operation was performed by carefully dividing the integuments, platysma myoides muscle, &c., at the inner side of the sterno-cleido mastoid muscle, to the extent of two and a half inches down to the clavicle; then with great care opening the sheath of the vessels, avoiding the internal jugular vein and par vagum, a ligature was passed under the carotid artery below the omohyoid muscle, in consequence of the tumour encroaching too low down to admit of its passage above this muscle. Immediately on this being done, before tightening the ligature, a peculiar, violent spasmodic action of the larynx occurred, resembling hiccough, probably owing to the exposure of the par vagum and the accumulation of saliva; this continuing, the patient was raised up, and the saliva discharged, when it ceased, and the ligature was then tied with a double knot; all pulsation in the tumour ceased immediately; the pupil of the right eye was noticed to contract at once, and continued so. A small cutaneous vessel was secured, the wound brought together with adhesive strips, and the patient removed to the ward. Before the operation, his pulse was 76; soon after, it was 84. The operation occupied fourteen minutes.

6 P. M. Pulse 84; no diminution in size of tumour; pupil still contracted; has some pain in the back of head, and complains that, when he dozes, there is a peculiar lightness or swimming sensation in the head; has had a return of hiccough, which has lasted for about a half hour; it was at once relieved by a drink of mineral water—this, with barley water, is all he is allowed—directed a teaspoonful of the solution of morphia at bedtime.

22*d*, 9 A. M. Pulse 88; skin warm; tongue furred; slept none during the night; countenance, however, is much better, and he expresses himself as feeling more comfortable; pain in the back of head continues; tumour less tender and painful than it was before the operation.

6 P. M. Pulse 104; skin hot; bowels were opened by an enema, Dover's powder, gr. x, given at noon; still complains of pain on the back of the head, for which he is to lose five ounces of blood by cups to back of neck; Dover's powder to be repeated at bedtime.

23*d*. Slept little last night; the pain in the head was relieved by the cupping; now has slight pain behind the ear, but says he feels more comfortable than he has done for three months.

24*th*. Pulse 100, cheerful; slept part of the night, having taken a teaspoonful of the solution of morphia; is free from pain except in the eyes; the pupil of right eye contracted; the eye itself appears smaller than the other; the upper lid droops; the wound is suppurating; water dressings applied; the salivation still continuing, he is ordered a wash of sage tea, honey, vinegar, and borax.

25*th*. Pulse 88; slept but little last night, although he took the morphia; the tumour is evidently smaller; free from pain; can open his mouth better; in protruding the tongue, it is noticed to curve towards the right side.

26*th*. Pulse 84; slept most of the night, having taken the morphia as usual; complains of pain in the tumour, also in the upper part of right side of the chest, and of numbness extending down the arm; upon removing the adhesive strips, we find the wound looking well; union by the first intention at the upper part.

28*th*. Tumour much smaller; still complains of pain in it; has slept part of the last two nights; bowels are opened daily by enemata.

29*th*. Wound looks red and swollen; discharge from it slight; shooting pain in the tumour.

30*th*. Feverish; pulse 100; less pain in tumour; ordered a Seidlitz powder and neutral mixture, ℥ss every two hours.

Nov. 1*st*. Pulse 76; tumour diminishing; still painful to the touch; wound looks better; discharge more free; omit neutral mixture.

Evening. Return of pulsation in the tumour.

2*d*. Pulsation in the tumour very distinct.

4*th*. Pain in the head very severe; pulse 116; skin hot and dry; ordered four ounces of blood, by cups, from the back of the neck, and to resume the neutral mixture.

5*th*. Still feverish and weak; pulse 120; pain of the head relieved.

6*th*. Free from pain; pulse 96; tumour smaller and pulsation less evident; the discharge from the wound somewhat bloody; discontinue neutral mixture; ordered an improved diet, oysters and eggs.

9*th*. Ligature came away to-day, being the twentieth day; tumour decreasing; pulsation can still be perceived; salivation continues profuse.

13*th*. Improving; is allowed to get out of bed.

16*th.* Takes exercise in the open air; the tumour is not larger than a chicken's egg; pulsation still felt.

22*d.* Pulsation in tumour no longer perceptible.

25*th.* Wound healed, excepting a small spot where the ligature was; this is cauterized daily; the salivation diminishing; in all other respects, quite well.

Dec. 9*th.* In consequence of his great anxiety to get home, he is now discharged, cured.

July 7*th*, 1849. I have seen Wright several times since he left the hospital; he continues perfectly well; upon a careful examination, this morning, I am unable to find the least vestige of the tumour, or any other disease.

I am indebted to the house surgeons, Drs. Sergeant and Stillé, for many of the daily notes of the preceding cases.

ART. VII.—*Case of Cerebral Irritation.* By EDWARD R. SQUIBB, M. D., Assistant Surgeon of the United States Navy.

"THE attempt," says a distinguished author, "to analyze, distinguish, and describe all the external appearances of disease, cannot fail to assist the clinical student and young practitioner, whilst it serves to recall to the mind of the experienced those sources of evidence on which his judgments have been ever, though perhaps unconsciously, founded."

The following case having appeared to the writer to be quite anomalous, and having presented many difficulties in the way of clear diagnosis, is reported with a view to reproduce, in the form of an example, some information contributed to the profession in didactic form, principally by Drs. Gooch and Marshall Hall.

Another object in offering it is, that it may fortify some of the less experienced, against the difficulties with which it harassed the writer, in consequence of his ignorance of the peculiar affection, and of what had been written upon it.

The subject of the attack was a sergeant of marines, aged thirty-four; near six feet in height, rather attenuated, but not markedly so; light complexion, and eyes; dark-brown thin hair, and bad teeth. Sedentary from habit and want of occupation; addicted to the moderate use of spirituous drinks, but abstinent for one month, in consequence of the frequent attacks of gout, to which he was constitutionally liable; the curative powers of nature had become depraved, inactive, and inefficient. From the attacks of palpitation and uneasiness about the heart, from which he often suffered, and from a somewhat imperfect physical examination, he was supposed to have a simply hypertrophied heart.

During twenty-two months he had been on the sick list; once, for facial neuralgia; once, for dysentery; three times for gout, and once for gouty ophthalmia; and, for three weeks previous to his severe illness, he had "felt badly," and "eaten sparingly."

The case was of eleven days' duration, from its advent to established convalescence; its occurrence and progress being nearly as follows:—

On Thursday, March 22d, 1849, at one o'clock P.M., he was attacked, while exposed to the sun, in an open boat, with dizziness, ringing in the ears, and disturbance of vision, and a moment after had lost all sensibility. In this condition he was immediately carried on board ship; and, when first seen, a few moments later, he had partially recovered his sensibility, and was retching, but not violently. His body had become rigidly extended, and the surface was cold and moist. The countenance was red and swollen; the conjunctiva injected; the veins of the forehead distended, and the arteries of the neck throbbing visibly. The pulse was hurried, small, and irregular; and the breathing hurried, and interrupted by retching. The mind was disturbed, and there were constant complaints of intense "bursting pain" through the temples and upper part of the head.

Mustard cataplasms were freely applied to various parts of the body and limbs, with a hot mustard foot-bath. Six ounces of blood were abstracted, by as many cups, from the nape of the neck; the bared scalp was covered with cool, wet cloths, and the body placed in an inclined position, with the head elevated.

After these measures, the countenance assumed a more natural colour, although the eyes still retained an unnatural brightness, and the conjunctivæ were still injected; sensibility was restored; the rigidity and gastric irritation abated; the general surface had become warm, and the pulse more full and regular. The mind had become settled, and the throbbing pain in the head nearly gone. In the evening, a purgative of calomel and compound extract of colocynth was given, after which he slept tolerably well during the greater part of the night.

Friday. Continued better, with but slight pain in the head, augmented by motion, with slight febrile action throughout the day. No paralysis or rigidity; face and neck still reddened, and eyes injected, and shining beyond what was natural. About 6½ P. M., pain through the head began to increase, with throbbing, and was accompanied by increased redness of the neck, face, and eyes. Pulse became full and strong; skin hot and dry, with full recurrence of the intense bursting pain through the head; disturbance of the senses, and wandering delirium.

One and a half ounces of blood from each temple by cups; cool cloths to the head, and a hot mustard water foot-bath were directed, with the effect of abating all the symptoms within three hours, leaving much the same condition as during the day. At 10 P.M., directed half a grain of calomel, with one grain of the powder of ipecac. and opium, to be given every half hour during wakefulness. Alvine and urinary evacuations at 11; after which, he was restless, but without much pain until 4 A.M., when he slept during two hours.

Saturday, 6 A.M. Marked mercurial fœtor in the breath, and three hours later increased flow of saliva. No mercurial powders had been given after 4 A.M. 9 A.M. directed a saline cathartic, and creasote mouth-wash; was better throughout the day; pulse 95, soft, and more regular; skin cool, but dry; no delirium, and but little pain in the head. Intolerance of light and noise, with injection and brightness of the eyes still continued. 6 P.M. directed a small quantity of prepared tapioca; ptyalism excessive; has thirst, but can only take drinks when lukewarm, from the pain they cause in his mouth. Alvine evacuation at 11 P.M.; cool applications to the head continued assiduously.

Sunday, 4 A. M. Was seized with a chill; loss of sight, and partial loss of hearing; recurrence of the intense pain and delirium. Pulse 140, small, hard, and irregular; surface cold and moist; face and eyes red and swollen, with turgid veins and throbbing arteries. Three cups to the nape of the neck, and hot mustard water foot-bath were added to the cool applications to the head. In two hours and a half the skin had become warm, and of a good colour, the pulse had fallen to 120, and become full and regular, and the delirium had given way to a comatose sleep, from which, however, the patient was easily aroused by a loud tone of voice. Pulsations of the heart visible, and easily counted by the motion given to the bedding. 8 A. M. found him awake and composed, without much pain in the head, but much disturbed by the noise and light. Complained much of the soreness of his mouth and tongue, and of his inability to satisfy his thirst. Continued in much the same condition throughout the day, having taken some tapioca and tea. 8 P. M. Pain in the head increased; face red, veins turgid, arteries throbbing; pulse 130, full, and hard; upon which restlessness and delirium again supervened.

These symptoms had abated at the end of two and a half hours, and he passed the night principally in restless sleep, disturbed by frightful dreams.

At 10 P. M., commenced taking sulphate of quinia in solution, to the amount of two grains every four hours during wakefulness.

Monday. Was better during the entire day; countenance much more natural. Cool applications assiduously kept up during the day, and the lower part of the body kept warmly covered. Took some thickened soup three times during the day, and some pulp of bread and milk in the evening. Lukewarm milk and water, substituted for water as a drink.

Tuesday. Complained much through the day of tenderness and soreness of the scalp and eyes, and of certain parts of the legs and feet; the tender parts of the latter being of a marked livid hue. Mouth worse, but felt much the same in other respects; pulse 120, soft, and moderately full; surface in good condition; had free perspiration during the last night; substituted mouthwash of hydrochloric acid for that of creasote. Quinia and diet continued.

Wednesday. Somewhat improved in every respect; complained of debility for the first time, and also of feeling "nervous," with feverish and chilly flushes. In the night, had a return of dizziness and pain in the head, but for a short time only, and not so severe as before. Quinia and diet continued.

Thursday. Complained chiefly of debility and soreness of his mouth. Refused to take the solution of sulphate of quinia on account of the pain it gave his mouth, and was whimsical and petulant throughout the day. 11 P. M. awoke from a quiet sleep, and had a fit of violent weeping, which he could neither account for nor control. Was much disturbed during the night by the palpitation of his heart, which he could plainly hear and feel throughout his body. These pulsations were so irregular and intermittent, that it was impossible to get ten successive beats, and frequently three or four strong throbs would occupy the time of double the number of natural pulsations. By estimation, the rate of the pulse might have been about 70. To the ear, this irregularity was even more marked. The sounds were all somewhat indistinct, although the impulse was unusually strong. The first sound appeared to be lengthened and roughened. Directed profound quiet of body. Sulphate of quinia to be resumed, and given in mucilage three times a day. Diet to be continued. Tepid sponging to the surface.

Friday. Much the same, except that the irregularity in the heart's action had settled into the regularity of omitting every fifth pulsation. The pulse and chest were examined half hourly for five successive hours, during which this regular irregularity was distinctly marked. About 3½ P. M. became restless and feverish, the pulse rising to 122, becoming full, and losing its irregularities. This febrile access proved to be ephemeral, and he slept during a great part of the night with a quiet and comparatively regular pulse, having taken a fluidrachm of compound spirit of sulphuric ether at 9½ P. M.

Saturday. Much better; complained only of soreness of the mouth, and debility. Pulse 75, moderately full and regular; skin soft, moist, and of good temperature; sore blue patches on the extremities disappearing. Continued quinia and diet.

Sunday. Still improving; pulse 75, with very slight irregularity; evacuations nearly natural; sleeps well and quietly; appetite commencing; mouth much better. Continued quinia, and directed nutritious diet.

Monday. Convalescence established.

A month later, this convalescence was interrupted by an attack of the rheumatic fever, then epidemic at Rio de Janeiro, from which, however, he quite recovered, and was restored to tolerable health by the middle of June.

In the analysis of this case, it is necessary to observe that each man on board our vessels has a gill of whisky per diem issued to him, and that half this quantity is taken undiluted immediately before each of the earlier meals of the day. It thus becomes an habitual excitant to the stomach and appetite, rendering palatable the sound, but not very tempting diet.

About one month before the attack, the patient's stomach had been deranged by the free use of colchicum, and his spirit-ration stopped, after which he ate sparingly, and felt badly. The effect of anorexia and want of exercise, upon a somewhat depraved constitution and attenuated form, after two years' confinement on board ship, was inanition and consequent morbid nervous irritability—the predisposing cause of the attack. His duty rendered it necessary that he should remain for half an hour, at noon each day, in the fruit-boat, which came alongside at meal-times.

The direct rays of the sun of a tropical climate upon the flat-topped black leathern cap, produced a depression and relaxation of the system, inviting congestion from the hypertrophied heart to the least-resisting point, which, from immediate exposure and irritability, was the brain. Thus, in insolation and hypertrophy of the heart, the exciting cause may be recognized. The symptoms of the attack were unquestionably those of cerebral congestion, and the predisposing cause indicated that this congestion was a passive one—the result primarily of nervous irritation. The ready subsidence of almost all the grave symptoms, was yet stronger affirmative evidence, which the second, somewhat similar, attack might not overthrow. This second paroxysm had, in addition to the increasing nervous irritation, the powerful auxiliary cause of habit, or precedent attack; and the difference between the two might be attributed to succession and the effect of treatment. Then came the prompt and excessive mercurialization, affording, except for the possible effect of idiosyncrasy, conclusive evidence against the active or inflammatory character of the affection. The interval, consisting of the third day, passing without marked febrile action, and without delirium or interference with sensation or motion, added yet greater weight to the already sufficient evidence. The two attacks of the fourth day, produced by the yet uninterrupted cause, and by established habit, and modified by increased susceptibility and treatment, only could serve to multiply opportunities for observation, and sources for confirmative evidence.

After this, the effect of a generous diet, an efficient tonic, and a nervous sedative could be predicted with great certainty, provided the vital forces were yet capable of responding to the assistance thus offered.

Thus, an experienced practitioner might have gone inductively through the case, without a desire unsatisfied, or a fear for the result: but it was not thus with the writer. Losing sight of the predisposing, in a nearer view of the exciting causes, the congestion was at first supposed to be an active one, and the second paroxysm was mistaken for a reaction, rendered tardy by the depressed condition of the vital forces, which was to usher in a meningitis. This view was not, however, adopted with the confidence of certainty, and therefore active depletory measures were postponed, and mercury was resorted to as a tentative. The effect of this latter agent was to still farther unsettle the adopted view. Yet the possibility of an idiosyncrasy, or of a temporary condition of the system, which might account for this mercurial sensitiveness, would not admit of the full adoption of what is now considered as the correct view of the case until the fourth day.

To exculpate the writer from having too readily adopted a view of the case, which was probably erroneous; or, in short, from having jumped at a conclusion, it may be remarked that he had frequently seen the active congestion or "sun stroke" before, and had always been able, by active antiphlogistic measures, to avoid the consequent cerebral inflammations which so commonly follow them, in persons temporarily resident in tropical climates: whilst he had never seen a congestion of this character, and was not properly acquainted with what had been written upon nervous irritation. However easy the diagnosis of this case may appear from analysis, it appeared quite the contrary to the writer when viewed synthetically; for, throughout its course, it proved to be of that class which affords little else than anxiety from whatever method of treatment, and distrust from all.

U. S. Brig Perry, at sea, *July* 1*st*, 1849.

Art. VIII.—*Notes of Hospital Cases.* By Henry Hartshorne, M.D.

Lithotripsy.—More triumphant results of surgery have rarely been seen, than those of the instrument of Heurteloup, in the hand of the late Dr. Jacob Randolph, senior surgeon to the Pennsylvania Hospital. His numerous and beautiful operations in private practice are well known. At the opening of the winter of 1846–7, he crushed a stone in the bladder of a boy, nine years old, before the hospital class. The instrument was introduced several times, with a few days' interval, obviously producing *no pain*, and effecting an entire cure.

In the fall of '47, a young man nearly of age, presented with a large stone, which had been forming for many years. The same operation was performed. At the first sitting, the stone was caught in *one minute*, and in four minutes was broken three times. This was considered an unusually slow operation. The only pain was felt in the introduction of the instrument, which was little larger than the ordinary catheter. The fragments, which soon passed abundantly, were *angular*, some of considerable size. He suffered, at times, considerable pain in passing them, which was moderated by warm hip baths and flaxseed tea.

The instrument was introduced three times in three weeks. It was then shown, by the sound and by his sensations, that nearly the whole of the stone had passed away in pieces. He could then retain his water, six or seven hours.

About two weeks after the last operation, a large angular fragment became fixed in the urethra, near the membranous portion, and caused considerable irritation. After vainly endeavouring to extricate it by forceps, the bent probe, and the curette articulée of Leroy D'Etiolles, Dr. Randolph was finally obliged to cut it out externally. The patient left the hospital, and, as we were informed, recovered entirely.

Notwithstanding the protraction of this case, the contrast between lithotripsy and lithotomy in the hospital has appeared vastly in favour of the former, as to the amount of pain and danger of an unfavourable termination. Some cases of fatal peritonitis after the cutting operation are recollected, as well as some serious secondary hemorrhages. An observer in the wards would therefore incline to accord with the opinion of the distinguished surgeon just named, that lithotomy should be banished from surgery, or at least confined to a few exceptional cases. It is true, that dexterity in the use of the instrument is a requisite not to be acquired without difficulty; but a due appreciation of the advantages of the operation must cause the removal of this objection.

Parturient Peritonitis.—Ann Gideon, of feeble health for some time previously, was noticed on admission, pregnant, to be unusually enlarged. Near the time of her delivery she was attacked with very severe abdominal pain, lasting sometimes for several days, accompanied by symptoms of congestion of the brain. The abdomen was enormously distended and tender to the touch. Diarrhœa also occurred. Her sufferings for some days before delivery were agonizing, night and day. The treatment was by opiates and gentle cathartics, with fomentations to the abdomen. She was delivered, very rapidly, of an anæmic child, which died the next day.

Her abdomen remained still in a state of uniform globular distension, as great as that of some women at full term. Tenderness was considerable, and pains occurred at intervals, especially in the back. Dr. Hodge considered the seat of the gaseous accumulation to be the peritoneum. Under mild palliative remedies, she recovered entirely in about two weeks after confinement.

Puerperal Fever.—A painful history of the prevalence of this malady at one time in the hospital was given by Dr. F. W. Sargent, in a previous volume of this journal. In the cases reported by him, the treatment by very large bleedings proved unsuccessful. I have at hand notes of three cases, where a plan, characterized by *large doses of calomel* and other cathartics, was attended by similar results. A few details of one may be related.

Bridget Gray, aged 25, was admitted 6th mo., 4th, 1847, and was delivered the same day, at 6 P. M. She was attended by the resident surgeon. There was, however, at the time, no erysipelas in the wards. The labour was short and ordinary. The lochial discharge was, she said (it was her fifth child), unusually abundant, and continued so till her third day.

She was perfectly comfortable the second evening, with the exception of an occasional after-pain. Before midnight, however, a heavy and protracted chill came on, with violent pain in the abdomen and back, followed by considerable fever. I found her at half-past two A. M., with a pulse about 120, and rather hard; skin warm; pain in the abdomen at its lower part and in the back and left groin, as well as in the head. Pain on moving the limbs, or taking a long breath, and tenderness on pressure, especially over the womb and in the left lumbar region. Milk very scanty, breasts flabby; but the lochial discharge still continued. I bled her at once, a few ounces; had sixty leeches applied over the uterine region, and gave four grains of calomel with one-third of a grain of opium, which was repeated in two hours, and followed by a dose of oil.

At 7 A. M. I bled her, by Dr. Hodge's direction, to the amount of twenty ounces. She bore this very well, and seemed somewhat relieved. Dr. Hodge also ordered hyd. chl. m. gr. x, p. opii gr. j, at once.

At noon, no fecal evacuation had been obtained. Two teaspoonfuls of magnesia and a laxative enema were ordered. Three hours later, as there was still no passage, Dr. H. ordered an ounce of Epsom salts. To relieve nausea and retching, small pieces of ice were allowed. Three or four evacuations were soon obtained, but in addition, a powder of calomel and jalap, ten grains each, was directed. After this she had four passages.

At 10 P. M., she was certainly more comfortable than at any time during the day. Skin pleasantly warm, pulse still over 130. She sleeps considerably. Neutral mixture was given, and a grain of opium every hour directed, if she suffered much pain or was sleepless, and venesection to be repeated if the pain was great and fever continued.

I saw her before four o'clock the next morning. She seemed uneasy; complained of increased soreness, although scarcely any pain when still. Pulse 120; skin warm. Bowels moved four times in the night. The venesection was not repeated. The grain doses of opium were continued at intervals of about two hours.

At half past 8, she was quietly asleep, and roused with difficulty. The tenderness of the abdomen seemed to have almost disappeared; she was somewhat narcotized; skin warm and moist; the tongue had been moist throughout; pulse over 120 yet. A warm poultice was applied to the abdomen, and ten grains more of calomel were given at once.

At 3 P. M., another dose of calomel, and a large blister was applied to the abdomen; pulse 130; skin warm; thirst great; the lochial discharge had become very slight; she had then no pain, except on motion; the tympanitis, before slight, was increasing.

Before evening, retching and vomiting of a yellowish fluid came on, with coldness and clamminess of the skin, and greater feebleness of the pulse—the whole aspect being that of great debility. Ice, effervescing draught, limewater, &c., were used to check the vomiting. Dr. Hodge also prescribed quin. sulphat., gr. j, every hour, and small quantities of milk punch. In a few hours she became tranquil and comfortable; but the vomiting returned during the night, with slight diarrhœa. Still no pain, except on motion. A sinapism was applied to the epigastrium, and forty drops of laudanum were injected into the bowels.

In the morning, port wine was substituted for the punch; the quinine being continued. The bilious vomiting and purging increased, however, and she died before midnight. An autopsy was made the next day, in presence of Drs. Hodge and Pepper.

The first fact noticed, was the total absence of peritoneal adhesions, and, indeed, of coagulable lymph, except a little immediately about the uterus and ovaries. The left ovary, in the region of which the pain had been first felt, was in such a disorganized state, as to leave little doubt of the existence of an abscess in it, which had ruptured. There was a very large amount of seropurulent fluid in the abdomen, perhaps thus to be accounted for. The uterus was *white* throughout; no decidedly morbid appearance could be detected in it. The intestines and stomach also were pale. The liver appeared to be in the natural condition.

I have also the notes of two other fatal cases, in neither of which did the symptoms commence till the third day after delivery. In both, severe pain occurred before any tenderness or soreness was felt, and at first the pain was not constant. For one or two days, in each, the soreness and pain were confined to the region of the womb, and there was then no tympanitis. The inflammation afterwards extended, and took on all the characters of peritonitis. One died on the sixth day of confinement, the other on the eighth. One of them had previously had excellent health. The latter appeared decidedly better on the fifth day—free from pain, and without fever; but bilious vomiting came on, followed by *collapse,* and she died in spite of active stimulation.

There can be now no doubt of the truth and importance of the assertion, that epidemic and sporadic puerperal fever are different in type, and frequently require a difference in treatment. The sporadic attack is often less malignant. Observations in the hospital, have induced great doubt whether very large depletion and great reduction by calomel, or other active cathartics, give the best hope in the epidemic cases; while out-door experience constantly affords instances of cure, where many of the symptoms are the same, by moderate venesection, leeching, purgation, and small doses of calomel and opium. Practitioners have also sometimes recorded incapacity to bear much depletion in the epidemic cases, occurring out of the hospitals. It is on this idea only that we can reconcile the contradictory results of treatment in this terrible disease.

Puerperal Fever and Erysipelas.—The connection between these two disorders can be neither proved nor disproved by any facts observed as yet in the hospital; but a few things have been noticed with regard to them, which have some bearing upon the question.

Both have, many different times, *prevailed* in the institution, attacking a number of patients at once, or successively. At such times, not only surgical, but purely medical cases have become complicated with erysipelas; and once, at least, an officer of the house was attacked. Sometimes, though far from always, the epidemics of puerperal fever and of erysipelas have been simultaneous.

The *contagiousness* of neither has, in our cases, been well established—if that term be clearly distinguished from infection or epidemic extension of disease. A man, dangerously afflicted with erysipelas from a compound fracture, in a ward in the third story, was brought down and placed in a room with four or five other surgical cases, having one on each side of him, within a yard or two. No one received the disease. A woman was admitted by the attending surgeon, and a man by the physician, affected with erysipelas, but no other cases followed. These are named as instances only; but even a large number of them, being only negative facts, could prove very little. As it happens, however, my notes afford nothing to the contrary, which could not be more rationally ascribed to epidemic influence. I mean to say, that I recollect no case where the proximity of a patient to a case of erysipelas was followed by an attack, unless at the time the disease was obviously prevailing in the house.

Isolated cases of puerperal fever have also again and again occurred, in the midst of women, some of whom were delivered within a few hours or days of each other.

Whatever the fact may be worth, I find it noted that the only two cases of puerperal fever in the ward, for several months preceding 6th mo., 1847, occurred in women who were attended in delivery by the resident in charge of the *surgical* wards, in which erysipelas existed at the time. A number of other women, delivered at nearly the same time by the medical resident, escaped.

If, however, puerperal peritonitis be an internal erysipelas, why is there not often, especially in cases which recover, an accompanying *external* exhibition of the eruption? The vagina is sometimes inflamed when metritis exists, but very few examples are met with in which the skin partakes at all in the disease. Perhaps the hypothesis in question, if at all plausible, should suggest a more extended and persevering use of *counter-irritation*, by leeches and blisters, to favour the substitution of an exantheme for a mortal phlogosis within the abdomen.

Tincture of Iodine in Erysipelas.—The utility of this preparation, applied as a "cordon sanitaire," was repeatedly demonstrated, although it proved by no means infallible.

Erysipelas produced by Heat.—At a time when the wards generally were entirely exempt from the disease, two men were attacked, one in each of the only two rooms in the surgical ward, warmed by an open coal grate. Their beds were the nearest to the fire, and constantly affected somewhat by the glare, although sheltered by screens.

Purpura.—Three cases of general cutaneous ecchymosis, accompanied by swelling of the legs from effusion of lymph, and other scorbutic symptoms, are noted as cured by the acid and tonic treatment—viz., by lemonade, elixir of vitriol, tincture of the chloride of iron, port wine, and abundant vegetable diet.

Psoriasis.—This was removed entirely, in four or five instances, under the use of liq. potass. arsenit., tar ointment, and baths of flaxseed mucilage. Donovan's solution was occasionally tried, but was not long borne by the stomach.

Cases of Tetanus.—Five are recorded as having occurred in the hospital in four years. The first two were among the *coincidences* so frequently observed there. Two boys, each about nine years old, had their limbs crushed by railroad cars, within a day of each other. Both were very shortly attacked with tetanus, and died on the same day, after forty-eight hours' illness. Opium and assafetida had been freely used, in vain.

A coloured man and woman were attacked at different times, several months later. In these cases, the tetanic symptoms began two or three weeks after injury, and, perhaps, may have been excited by cold. Both recovered; one after a siege of three weeks, the other in half that time. The treatment consisted of purgation, at first with calomel—laudanum, in doses increased from fifteen up to ninety drops, every few hours, according to the condition, and stimulation with milk punch. The stimulation was considered by Dr. Norris an essential part of their management.

A white woman died 6th mo., 20th, apparently from thoracic and tracheal spasm. She had been unable to swallow for twelve hours, although her general convulsions were comparatively slight, and the rigidity was mostly confined to the throat.

Mania-à-Potu.—In the summer of 1847, twenty-six cases of delirium tremens were treated under the direction of Dr. Pepper, without any death. The only failure of complete recovery, was in a man very much broken-down by disease of the liver, &c., for which he was admitted, and who was removed by his friends. In one respect, this class of patients suffered under a disadvantage; they were, while ill, necessarily confined to their rooms, many of which, being in the basement, were too gloomy not to feed the dismal delusions and fears to which they were subject. There is no doubt that the most appropriate place for the management of such cases, would be a ward furnished with the space, attendance, and other conveniences and comforts of a well-regulated lunatic asylum; such, for instance, as the insane department of the Pennsylvania Hospital, Blockley.

In spite of these difficulties, however, the mortality in the wards in the city Institution is small. The usual treatment has been a combination of the moderate opiate, with the stimulant plan, varied according to the case. In mild or merely threatening instances, exercise such as was attainable, one or two bottles of porter daily, with full diet, and a Dover's powder or other soporific at night, proved sufficient. Where the nervous symptoms were well developed, but the pulse, warmth of skin, condition of stomach and muscular capacity evinced the absence of prostration, one grain of opium every two or three hours was given, perhaps with worm-wood tea, but without alcohol, unless the patient was known to have been habitually a large drinker. If the skin became cold and clammy, the pulse rapid and small, and long vigilance produced general exhaustion, brandy was directed, to the amount of a tablespoonful every hour or two, and one grain of opium was given every hour as a maximum. This course rarely failed to induce sound and prolonged sleep in from one to three or four days; and the sleep was almost invariably followed by immediate recovery. In several cases, a blister to the nucha shortened an obstinate attack. Laxatives were required by a number. Intractable vomiting and rejection of food gave trouble frequently, but were subdued by the usual means. The most tedious case was that of a young lawyer, M———, whose symptoms, from the first, were less violent than the average; but who continued rather to lose than gain for three weeks, having the ordinary delusions constantly, with some tremor and increasing wakefulness. After having increased his anodyne to the amount of two grains of opium every two hours without effect, Dr. Pepper substituted the following: ℞. Tinct. valerian, ʒiij; Liq. morph. sulph. ʒss. M. S. q. h. quart.; and directed also an enema of a drachm of laudanum every night. His first long sleep, the precursor of cure, took place after a *warm bath,* the head being at the same time placed for some minutes under the cold stream of the hydrant.

In the course of the two years under observation, some fatal cases of mania-à-potu occurred, chiefly in the connection with violent injuries. But, whatever may be said of the success of the simple alcoholic plan in other institutions, or of the excessive narcotic treatment formerly in vogue, there appeared to be every reason to be satisfied with the combination of the use of moderate doses of opium with stimulation proportioned to the asthenia of the case.

The mode of termination of one fatal case was remarked particularly. Patrick Riley, cab driver, was admitted 6th mo., 11th, 1847. He was evidently delirious, but passive, and not noisy. He had been bled by a physician out of doors, on account of more violent symptoms. The pulse was, on his entrance, somewhat feeble, and the skin cool. We gave him at once an ounce of brandy—his usual beverage—and thirty drops of laudanum. The watchman was directed to give him twenty drops more in the night, with half an ounce of brandy, if he continued sleepless.

I was called early in the morning to see him, in a comatose condition; face livid; respirations at long intervals, and stertorous; skin warm; pulse rapid, and somewhat full. The physiognomy and breathing were exactly those of fatal narcotism from opium. Cold was freely applied to the head, and cathartic injections thrown into the bowels, while the feet were surrounded with sinapisms; but he died in the course of the day.

It was impossible that ordinary narcotism could have been produced to such an extent by fifty drops of laudanum, in two doses. The fidelity and care of the watchman could not be doubted. The disease itself must have imitated the action of opium. Dr. Pepper pronounced this opinion decidedly; and confirmed it by reference to a case mentioned in Watson's Practice, almost exactly similar in all respects—the man having been bled, and then having swallowed three grains of opium, died with all the symptoms of laudanum poisoning. Dr. Watson considered the universal experience of the tolerance of opium in mania-à-potu, to prove plainly that the disease had spontaneously assumed that mode of termination.

Tubercular Meningitis and Peritonitis.—I have noted but two cases in which tubercular disease of the membranes of the brain or abdomen was the prominent cause of disorder. Both were in adults; one colored. They were somewhat protracted, but fatal, and made the subjects of post-mortem examination.

ART. IX.—*Thoughts on Suits for Malpractice, suggested by certain Judicial Proceedings in Erie County, Pennsylvania.* By WILLIAM M. WOOD, M. D., U. S. Navy.

SINCE my duty has required my presence in this section of country, I have several times been summoned as a witness in trials for malpractice. The character, conduct, and results of those cases, go to show that in them, as too often in others, the principles of law, intended for the protection of the community, are perverted into powerful instruments of wrong and injustice.

The general influences, leading to these perversions of justice, can be readily understood and appreciated by all, and it may not be out of place to notice them, before detailing the special cases in which these influences have been manifested. It is well known, that all efforts to limit the exercise of the profession of medicine to those who have the abilities and acquirements essential to its proper understanding, have utterly failed; and ignorant and impudent pretenders, under a great variety of humbugging titles, come before the public with equal rights, and a better chance for popular favour, than the regular practitioner. The public, unfortunately, seems to consider all efforts to limit the practice of medicine to those of scientific attainments, as the attempt of a sect to monopolize rights, and to infringe upon the largest liberty. Under this latitudinarian license, we have Indian doctors, urine doctors, root doctors, water doctors, steam doctors, and homœopaths, preying upon the community; and each has his representative here. Some among them are too ignorant to know their own ignorance; and others, cunningly calculating how much the mystic and marvellous—the disposition to be humbugged—preponderate in human nature, over plain reason and common sense, appeal for a living to the greater ingredient, and shrewdly, if not honestly, make their bread out of the folly of their neighbours; only adapting their machinery to the refinement of the classes with which they deal. Charms and amulets do for some. The beautiful, refined, and fascinating vision of mystical phials and infinitessimal doses, touch the same chord in others. But how stands the regular practitioner affected by such circumstances? Why, it is this assemblage of varied dye, which represents the profession to the community; they are all of the healing art—doctors—as well as the M. D., and the interests and prejudices of the whole class are against the acts and doings of the regular practitioner. Hence, ignorance and charlatanism become the rule, and intelligence the error. As will be seen, it may be very unsafe to cure a man on scientific principles. The anecdote of the old lady, who gave implicit belief to her sailor son's story of drawing up Pharaoh's chariot wheel on the fluke of their anchor,—but when he told of flying fish, charged him with lying, is an apt illustration of the faith and credence reposed in those who, studying nature's laws and truths, attempt to act by their direction. The course of the regular practitioner is all wrong; and, for unfortunate results, whether from the nature of the case, the neglect of his patients, or contingencies beyond his control, the regular practitioner is held responsible to a judicial tribunal, and he alone is held responsible. People have a right to die contrary to art, but *secundem artem*—never.

For some such unfortunate case, the regular practitioner is arraigned before a jury, the whole horde of "doctors" interested in driving him out, are summoned to give testimony. The jury is, of course, not accustomed to the mental discipline of investigating medical facts, and it may be, have the common prejudice against the regular practitioner. The most preposterous and absurd opinions are given to the jury in incomprehensible language, and with a pompous and dictatorial manner, but which makes an impression where the simplicity of truth would be unheeded. The very men who give this testimony are, perhaps, those who have instigated the suit. Add to the foregoing circumstances, the avarice of those disposed to escape their doctor's bill, and willing to take the chance of making money out of their injuries; the ingenuity of lawyers watching for cases, and determined to make fees; and it will be seen the regular practitioner pursues his profession under risk and hazards no prudent man would encounter. The consequence is, a fearful retribution is being visited upon the community in which such persecutions are sustained. Some of the most competent young men are driven off, and such as remain refuse to take the responsibility of surgical cases. Humanity is paralyzed in its efforts to relieve suffering, for I am told that services rendered in charity have terminated in a malpractice suit.

I was informed by an intelligent lawyer, that, before a jury, he would feel no confidence in the correctness of the practitioner's course saving him from damages. Another informed me that, when upon the bench, a suit was tried before him for malpractice, in the reduction of a dislocated shoulder. The ground was, that, at the moment of reduction, a "click" was heard, and, since then, the shoulder had been easily dislocated. It was proved against the doctor, by medical testimony, that, at the time of reduction, he had ruptured the *round ligament* of *the shoulder-joint*, and the jury rendered a verdict against him of five hundred dollars. The judge accidentally learned that there was no such ligament, and set aside the verdict. For such a deplorable state of affairs, deplorable for the profession, and more so for the community, the illiterate alone are not responsible. The singular support, which the influence of the pulpit too often gives to visionary and quacking schemes, has ever been a subject of wonder and regret. It is this influence which enables quackery to appeal to the public in the garb of respectability, and to appear to the mass as having equal claims with science. We should suppose that the laborious students of divinity, aware of the assiduous discipline and mental training, necessary to give the power to study—the power to acquire and arrange facts, to trace their connections, to investigate speculations, and to comprehend principles—would be the last to suppose that the comprehensive and intricate principles of medical science could be intuitively acquired by ignorant men. I cannot forbear quoting the remarks, or part of them, upon this subject, from the "Discourse of Dr. Francis, before the New York Academy of Medicine." In allusion to the clergy he says: "They, with all their benevolence superadded to the weight of their sacerdotal office, sustain theories, and give credence to alleged facts, which are often at war with the best-established principles of medical science, and indirectly do harm to that calling which is like unto their own corporeal nature, demanding physical relief, as the immortal soul, the support of divine counsel."

"The Right Rev. Bishops of the Church of Great Britain, with their subordinates, who set forth, in solemn testimony, their convictions of the cures derived from Perkins' metallic tractors, humiliating as was the spectacle, impugned not the orthodoxy of their religious faith; but it would be difficult to exonerate them from blindness in observation, and fallacy in judgment, in medical affairs."

"I well remember," says Dr. Francis, "an interview I enjoyed with the late Rev. Dr. John M. Mason, the unrivalled preacher of this country in days past. He had repeatedly travelled abroad, and extensively visited Great Britain. He was asked why he did not give to the public the results of his observation. 'Alas!' he replied, 'What sort of travels can I write? I neither understand the nature of the air I breathe, nor the water I drink, nor the earth I tread upon. My life has been appropriated to polemical divinity.' The frankness of this answer was characteristic of this honest and great man, who long bore the name of the American Paul."

The eyes of the clergy should be opened by one fact, if they are closed to reflection, and it is: That those of their body who study medicine scientifically, are never the advocates of quackery.

The bearing of the foregoing widely extended and powerful influences, will be illustrated by the following facts:—

Within a recent period, a young German physician and surgeon, Dr. B., located himself in this place, and he was one whose talents and acquirements should have secured him welcome and encouragement. With gentlemanly manners and deportment, he had a superior general education. As a pupil of Dieffenbach, he had enjoyed and profited by great professional advantages.

This gentleman informed me, that, from an early period of his residence, he had been persecuted by suits or threatenings of suits, let the results of his surgical practice be what it might; the people being, as he alleged, instigated to these suits by the irregular practitioners, who regarded his advent with a jealous eye, and who were called to the witness-stand as professional witnesses when the case came on. Prosecution was threatened, not only in cases of recovery with real or imaginary defect, but when his dislocations were reduced, and his fractures united, he was threatened with proceedings for having treated cases in which there had been no injury.

I was first summoned, on his part, to give evidence in the following case:—

During the prevalence of small-pox, two girls, who had been exposed to the contagion, applied to him to be vaccinated. Before the vaccine influence could manifest itself, one of the girls was taken with variola, and which proved to be a very bad case of confluent disease, leaving the girl dreadfully scarred. The arm of the other girl became very much inflamed. The charges against the doctor were, that he had communicated the small-pox in one case, and some unknown animal poison in the other. Medical men, as they called themselves, whoever they were, who advised this prosecution, ought to have known that extensive inflammation sometimes follows the insertion of the vaccine virus, and to have considered that, in the other case, the variolous disease had been communicated before the girl was vaccinated. The violence of the disease alone would contradict the idea of its being inoculated. But, on account of these cases, Dr. B. underwent a great deal of guerrilla persecution, professional and lay, besides being compelled to enter into expenses, and to take measures to protect himself before the court. The case was first brought before arbitrators, but was withdrawn from them to be carried into court. Dr. B., wearied of vexation, having made arrangements for his defence in his absence, left his suits, his property, and his family, to seek a more generous home and better rewards, in the golden valleys of California. Soon after the withdrawal of the foregoing case from the arbitration, I was summoned before a magistrate, to give evidence in another suit against Dr. B., or rather payment of the doctor's bill was resisted, upon the defence of malpractice.

A farmer in good health, and the prime of life, had his left leg fractured by the fall of a heavy piece of timber. The fracture was about the middle of the leg, and compound, both bones being driven through the soft parts, forming the calf. There was of course much extravasation. The doctor thought there might be a chance of saving the leg. He placed the bones in apposition, and retained them there by means of straw splints, made by neatly rolling a volume of straw in each end of a piece of canvass, and bedding the contused and fractured limb between them. The foot was prevented from falling over by a foot-piece made fast to the foot of the bed. Cold water dressings were at first applied, and afterwards a vinous wash. In the course of a few days, coagula clogging the orifices in the soft parts, and there being much stuffing of the limb from effused blood, Dr. B. made one or two incisions, to free it. Gangrene came on, and the limb was amputated by the double flap operation, through the lower third of the thigh.

Respecting the time occupied in the operation, there was a difference of opinion, the longest asserted being forty-three minutes up to the conclusion of the dressing, and part of this was lost by the operator having scalded his hands. About two days after the operation, the man died.

Taking into consideration the great mortality attending thigh amputations, I was at some loss to conjecture the grounds for alleging malpractice, and presumed it would be charged from the delay of the amputation. This was made a point, but barely touched upon. Malpractice was attempted to be shown from all the following points:—

1. The operation not being primary.
2. The time occupied.
3. *Not bandaging and enclosing the limb in firm splints from the beginning.*
4. The application of cold water.
5. Fastening the foot to the foot-board.
6. Making incisions.

The third, fourth, fifth, and sixth points were those most urged, and a Thompsonian or Botanic physician, and a Homœopathic, gave evidence adverse to the doctor on all these points. The scientific and unprejudiced character of the testimony may be judged, but the Thompsonian was complimented by one of the lawyers upon the excellency of his testimony.

The incisions, and the failure of the doctor to bandage this crushed and contused limb, were insisted upon as very great faults. The regular physicians sustained on the witness-stand the course pursued by Dr. B., and the justice rendered a verdict in his favour. What would have been the result before a jury, is by no means certain. But the exile of Dr. B. has, I believe, been the means of preventing this case from coming into the court.

Dr. B. having got out of the country, I began to hope that my services as a medical witness were, at least for the present, at an end; but at the very next term, that of the present month, I was summoned to give evidence in the following case. A woman, by a fall through a bridge, received an injury of the right arm. A country practitioner was called, and pronounced the injury a fracture, and treated it with a patent splint, for fractured radius. After six days' attendance, this gentleman was told he need not come again unless sent for, and from that time the family treated the arm without any professional advice. It is now a year since the accident, and the fractured radius is well united, but there is a dislocation of the carpal extremity of the ulna. In this case, the jury found against the doctor for four hundred and fifty dollars, which, added to the costs and loss of reputation, is, to a poor country practitioner, an overwhelming verdict.

It was not in proof that the Dr. discovered the dislocation at the time he reduced the bone, neither was it in proof that he did not, further than that he made no mention of it.

There are some important questions suggested by this case, and of interest to the profession and to the community. Admitting that the dislocation was not discovered by the doctor during his attendance, ought he to be held responsible for the final result, when he was dismissed after six days' attendance?

Had he been continued, it would have afforded him the opportunity of discovering the injury in time for its reduction, though it may be doubted whether, under any circumstances, the recovery would have been better than it has been. But again, how far ought the common practitioners through the country to be held amenable to a standard of professional excellence, which neither the ability nor the inclination of the people will justify by pecuniary compensation, and which excellence is, moreover, difficult of attainment, unless by a greater amount of surgical practice than the country affords? These certainly are important considerations for the profession, and for the people.

The existing state of affairs, it appears to me, is worth the consideration of those who are interested in the question of medical education now agitating the profession. Some few years ago, I heard a professor, in one of our principal medical institutions, defend, in his introductory lecture, the facility with which diplomas are granted by our colleges, upon the ground that it is better to provide the people with imperfectly educated physicians, than with those not educated at all. But here we see the people repudiate such doctrine; they not only claim to have, in all the highways and by-ways, the most skilful and accomplished men, but those who must make no mistakes and be liable to no accidents. It is better to be without a diploma; for then, besides having the sympathies of the community, the practitioner can say, "I make no pretensions, I offer no certificate of ability, and only gave my neighbour in his sufferings such aid as I could."

One of the most able and experienced practitioners here, now refuses to take the responsibility of surgical cases, and feels constrained to turn the applicants away to find help where they can. Being urged to take charge of a dislocated elbow, which, for want of aid, went a week unreduced, he would consent to do so, only upon being released from all responsibility. During the progress of the cases narrated above, a pregnant lady, it is currently reported, expelled her fœtus, and she herself died under the action of repeated lobelia emetics, exhibited by a botanic physician; but no proceedings, I believe, were instituted in this case.

It would certainly be a source of congratulation, if those who tamper with the health and lives of the people, whether by criminal ignorance or wilful neglect of their duties, could be held to a healthful accountability; but it is too much to require the regular practitioner only to be responsible; and to be not only responsible for the unfortunate contingencies of his profession, but subject to the avarice of the community, the influence and opinions of charlatans, the acute management of the bar, and the ignorance of juries. Such is the case at present, and the only remedy that I see lies with the bench. Let judges make themselves acquainted with what should be the qualifications required of medical men, according to the *standard justified by their location*, and charge juries definitely and clearly upon that point. There may be other modes of setting things right for the advantage of all parties, and I shall be most happy to see them suggested.

Erie, Pa., May 24, 1849.

ART. X. — *Case of Imperforate Vagina, and Malformation of Superior Portion — Operation — Cure.* By A. B. SHIPMAN, M. D., Prof. Surgery Indiana Med. College.

JANE H., aged 18 years, of small size, yet bearing all the external signs of puberty, had complained for nearly one year of pain in the hypogastrium, which was aggravated once in about four weeks, when she would be compelled to take to her bed a few days each month. A gradually increasing enlargment of the abdomen, and an incontinence of urine, with various other symptoms—such as irritable stomach, &c.—made her suspected of being pregnant. She was an inmate of the Cortland County Almshouse, from a child, and her intellect was not of the highest order—making it difficult to obtain a clear account of her previous history. At one time she would persist in the statement that her catamenia had come on, but, on questioning her closely, she denied ever having been unwell.

The physician of the almshouse (Dr. Carpenter) had never made an examination of her, per vaginam, until the superintendents requested me to visit her.

May 20*th*, 1849. Met Dr. Carpenter, in consultation. Found her in great pain; had been so for the last two weeks. Complained mostly of the abdomen, which was much enlarged, and a distinct globular tumour in the region of uterus. This was hard and tender. She had also pain in the back, hips, and limbs, with incontinence of urine. I learned that the pains at first were expulsive and paroxysmal, but latterly had been constant and unremitting. On examination per vaginam, found an orifice that would barely admit the point of the forefinger to the depth of one quarter of an inch, and terminating in a closed *cul-de-sac*. Examination with a probe failed to detect the least opening through this, nor could the uterine tumour be detected by this examination. A finger introduced into the rectum discovered the uterus, distended, and pressing on the rectum. A catheter in the urethra, and finger in the rectum, revealed the almost complete obliteration of the vagina, above the termination of the cul-de-sac—for the finger in the rectum came in contact with the catheter, there being apparently only a thin intervening membrane existing between the urethra and rectum, above the termination of the vagina. There seemed a space of nearly two inches of this absence of vagina, and the fluid appeared confined in the womb, as it made no pressure on the closed vagina, as in cases of imperforate hymen.

It was apparent that an operation must be performed, and that some little difficulty might be experienced in avoiding wounding the urethra, bladder, or rectum. Having administered the chloroform, to keep the patient quiet—she being of a refractory disposition—a catheter was introduced and given in charge to Dr. Homer D. Jewett, of Summer Hill. I introduced my left fore-finger into the rectum, to guide my incision; then, with a sharp, round-edged bistoury, I carefully carried the incision upwards, to the depth of nearly two inches. Then, with a large-sized trocar, I perforated the uterus, and withdrew it, leaving the canula. A stream of menstrual fluid, of the colour and consistence of treacle, flowed out with much force, until it was judged three pints had been discharged; it continued to flow for two days, when it stopped. The chloroform produced the most perfect insensibility while the operation continued. The incision was so narrow, that the finger could not be introduced, and I feared to make it more extensive, from the contiguity of the bladder and rectum.

am satisfied the vagina was obliterated from the bottom of the orifice to the uterus, and that, if any os uteri existed at all (which I greatly doubt), it was hermetically sealed. No unpleasant symptoms followed the operation, but, on the contrary, she got well at once, being able to go to work in two or three days.

Dr. Carpenter, whose care she was left in, failed to keep a tent in the opening, either through the patient's wilfulness, or some other cause, and two weeks from the operation she was taken in pain, and I was called. On examination, I found the orifice nearly closed; yet a small-sized catheter opened it, and gave exit to half a pint or more of catamenial fluid. Four weeks after this, she was again taken in pain, but the catamenia began to flow spontaneously at the end of a week. Since this time no difficulty has occurred, and the case may be considered as perfectly successful.

This is the second case which has fallen under my observation, where an operation was required to give exit to the catamenial fluid. The first one occurred in 1834, and was published in the *United States Medical and Surgical Journal*, for September, 1834. The young lady in this case was fifteen only, but of large size, and had been menstruating six months. The obstruction was produced by a dense membrane, a quarter of an inch in thickness, situated in the orifice of the vagina, where the hymen is found, and the fluid was collected in the vagina, distending it to a large size; yet, by making a crucial incision, and the use of large wax bougies, an opening was kept of sufficient size to admit the finger.

Four years after the report of the case, the patient married, and became pregnant. When labour came on, it was lingering, in consequence of the narrow band around the vagina. She lived thirty miles from my residence, and, after being in labour forty-eight hours, I was sent for; but she was delivered before my arrival of a dead child. Since then she has borne several children, without difficulty.

A case occurred to me, some five years ago, of a lady who had been married six years without being pregnant. She had always suffered greatly from pain at the menstrual periods, and I had prescribed the usual remedies for dysmenorrhœa, but with no success. Being anxious for issue, the husband strongly solicited me to do something to place her in a condition to bear children.

I proposed an examination, after hearing the painful character of sexual intercourse, and, to my astonishment, I found an almost complete closure of the vagina, an inch above its orifice. An examination with a probe, detected a minute orifice, where the menstrual fluid must have found its way out, yet so small as to make it difficult for coagula to pass, or even small shreds of mucus: hence the dysmenorrhœa. The obstruction was caused by a band of membranous substance, half an inch thick, very firm and dense. Sexual connection had never been satisfactorily performed; but modesty and bashfulness had prevented either of the parties from seeking relief—the husband, probably, supposing that his wife was not materially different from other women in her anatomical formation, and the lady, too modest to complain, or too ignorant of her condition to know of any remedy, went on from year to year, yet very anxious for offspring.

I proposed an operation to remedy this defect, which was cheerfully consented to by the patient. A probe-pointed bistoury was introduced, after exposing the patient, as in the operation for lithotomy, and an incision, of a crucial form, was made, to some extent, so that a finger could readily be introduced. A tent was next inserted, and left there, after using a T bandage to support it in its position. A large-sized spermaceti candle was directed to be passed daily for three or four weeks. The first time the catamenia appeared, after the operation, it was easy and free from pain, showing that the obstruction, as we had supposed, was the cause of the dysmenorrhœa.

But the most happy result of the operation was pregnancy, which followed speedily her recovery, and in due time she was delivered of a healthy child. Since that time she has borne several children, and her health has been perfectly good—a striking contrast from what it was previous to the operation.

The pain attending sexual intercourse in married ladies, is often a source of ill health, and, in some instances, I am confident, is the cause of sterility. It is often caused by some obstruction at the orifice of the vagina, or inflammation and thickening of the tissues about the nymphæ, or orifice of vagina.

A lady consulted me, some years ago, for pain and ill health, consequent upon painful sexual congress. She had been married seven years, to a widdower, who was nearly fifteen years her senior, and, as his prior marriage was without issue, felt great anxiety to prove his virility in some way. I found the lady with a finely developed body and genital organs, catamenia regular, and free from pain. She was troubled with leucorrhœa to some extent, especially after sexual connection.

On examination, I found a small, painful tumour just within the orifice of the vagina, of the size of a filbert, exquisitely tender, and of a vivid red colour. It was attached to the vagina by a base of half an inch in diameter, yet it could be raised from its attachments by the fingers. She informed me that, before marriage, she was conscious of an abnormal state of the parts, from the tenderness and tumour she had discovered with her finger. And the consciousness of this made her long hesitate about entering into her present matrimonial engagement. Sexual congress at first gave her severe pain, yet, after a time, became tolerable to bear; but, fearing it might have some agency in the absence of pregnancy, was induced to consult me. I advised an operation for the removal of the tumour, which was easily done with a pair of tumour forceps and bistoury.

After she had recovered from the operation, which was in two weeks, pregnancy immediately followed, and she was delivered of a fine, healthy child, to the great joy of the father, and not without the same feelings on the part of the mother. It is unnecessary to mention that she was never more troubled with pain by sexual congress.

Art. XI. *On the Influence of Sea Life upon Health.* By Richard McSherry, M.D. Passed Assistant Surgeon, U. S. Navy. [Communicated by Thomas Harris, M. D., Chief Bureau of Medicine and Surgery, U. S. Navy.]

As the subject of the influence of sea life on health is one of much interest, I beg leave to offer to your readers the following statement of the most prominent diseases, out of something over a thousand cases, admitted into this hospital during the years 1845, 6, 7, and 8, with some few remarks based upon personal observation.

I find on the register, 132 cases of pulmonary disease; of which 43 were entered *pneumonia*, 41 *bronchitis*, 25 catarrh, simple or complicated; 18 *phthisis*, and 5 *hœmoptysis*; 107 of dysentery and diarrhœa; 215 of fevers of various grades, types, and forms, from the malignant yellow fever of the West Indies, and the shores of the *tierras calientes* of Mexico, to the mildest intermittents of temperate and healthful regions. 130 of those maladies resulting, directly and indirectly, from impure intercourse with females; 82 of rheumatism, chronic, in nine cases out of ten; 26 of various organic diseases of the heart, and 12 of insanity. Of the remaining cases, upwards of 80 were injuries; including fractures, dislocations, &c.; and the three hundred and more not enumerated, embraced nearly all the ills that flesh is heir to. Thus we find the drunkard's mania, dyspepsia, hepatitis, the prostration mental and physical, that follows certain violent fevers, as those of the coast of Africa, various local inflammations and disorders, skin diseases, &c. The old curse of seamen, the scurvy, is almost unknown on our records, thanks to the lights of the age; two cases, brought most probably from the Gulf of Mexico (for there were some instances of it, during the blockade of that coast), appear on the books, standing as mementos of a once formidable enemy, long since overthrown, and now, well-nigh forgotten. Another tribute to scientific progress is found in the fact, that not one case of small-pox is recorded, though there are several of varioloid.

It will be observed that *phthisis* bears a very small proportion to the cases enumerated; for supposing, as is probable, that some of those entered as *bronchitis*, or more particularly *hœmoptysis*, resulted in the genuine tubercular disease, still the relative proportion to the whole little exceeds two per cent., a small ratio compared with the statistics on shore. Sailors have no exemption from consumption; and their manner of life is, to a certain extent, favourable to the development of acute diseases of the chest; thus they sleep crowded together by hundreds on the berth-deck, which is reeking with hot vapour from their breaths and persons, when, at the change of the watch, they leave their heated atmosphere, and find themselves suddenly cooled by the open air on the spar-deck, or perhaps by the keen breeze they may have to encounter in the aerial regions of the royal yards. *Per contra*, they spend their lives in the comparatively uniform temperature of sea air; they enjoy, in the navy at least, wholesome food and good clothing; besides which, their flights aloft, exercising equally the upper and lower extremities, expand the chest freely, open the air-tubes through all their ramifications, disperse the stagnation of blood in the capillaries, that oppresses the sedentary with a sense of weight and weariness long before tubercles are developed, and free the mucous membrane of the attempts of the last to form lodgments there. Officers are more subject to phthisis, comparatively, than men; they too sleep (with the exception of the commandant) in apartments rather crowded and badly ventilated, while their counteracting exercise is very moderate, and rather passive. Landsmen going to sea for their health, when there is a predisposition to the dread *opprobrium,* find the motion of the ship, the pure sea air, and hateful sea-sickness itself, renovating; but, if they be passengers or *idlers,* the cruize should be short; otherwise, long imprisonment is apt to bring on indigestion, nervousness, sleepless nights, and other important offsets to the earlier advantages.

Of the cases entered as dysentery and diarrhœa, it would probably be not amiss to suppose them all of the former, taking the terms in their proper signification; that is, considering diarrhœa a mere flux, a flowing through, and dysentery, as the word indicates, a grave and painful disorder of the intestinal canal, in which nature is making constant, but ineffectual efforts to relieve herself of a source of persistent irritation. Of diarrhœa, then, we have few cases, but many of dysentery. Scarcely a cruizer returns from the tropics, particularly from the East or West Indies, without bringing back a great or small proportion of these cases. In the East Indies, I have known nearly one half of a frigate's crew (of the U. S. ship Constitution) suffering at one time with the disease to a greater or less extent, though never more, I think, than one man out of every four or five was actually rendered unfit for duty. In that climate, it is our most formidable enemy; the more so, of course, as our robust and ablebodied seamen are not willing to come down to the sparse and simple diet of the native inhabitants. When Jack reports himself to the surgeon, and is put on rice, and bread and tea, and has his grog stopped, if he can manage to get a pound of pork, buried in beans, from his messmates, who look upon him as an injured and persecuted man, he forgets the harm he does himself in the triumph of "weathering the doctor." Gross diet, crude fruits, and frequently bad water, in addition to the effects of climate, convert a naturally intractable but not generally dangerous disease, into, too often, a fatal one. Dr. McLeod, the accomplished surgeon of the Constitution, showed me a communication he received from a French naval surgeon, on the East India station, in which it was stated that, in the French squadron, great benefit had resulted from allowing none but distilled water to be drunk; or, in case it was not to be had, that the water should be kept on board-ship, before used, at least two months, to give it time for self-purification. This harassing disease is commonly preceded or introduced by constipation; it appears, that with a general prostration of the muscular system, that portion of the intestinal tube loses tone, and is unequal to the task of propelling the contents as it does in ordinary health; then the bowels become torpid, constipated; the contents of the inferior portion become hard and indurated, and at length irritating. Nature then tries to throw off the burdensome scybalæ. Glairy mucus, and bloody serum come away with pain and straining, in place of natural alvine dejections. I do not propose, in this paper, to dwell on the treatment of disease, but may remark *en passant*, that I have seen the most soothing effects from free doses of mercurials (calomel, in twenty-grain doses), from general or local bloodletting, according to circumstances, and from hot fomentations, &c., over the seat of pain; while, on the other hand, I may say that in most cases bloodletting was not called for, and that I treated some cases experimentally, without mercury, without any other apparent difference than that their progress towards recovery was somewhat slower. Of astringents, when called for, I know of no single one more reliable than the unpretending alum. et potass. sulphas.

Of the fevers, and various other maladies enumerated at the beginning of this paper, I have at present nothing to say. With some of them I have no familiarity, and others are common to all conditions and all climates, and therefore have no particular bearing on the subject in question. I will therefore conclude, at once, with a short notice of a subject of naval *hygiene.* It is scarcely necessary to premise that dampness on ship-board, through all the apartments, is perennial, and that cleanliness holds a rank in naval virtues second only to courage. Now it is a constant bone of contention, whether frequent washing of the lower decks is, or is not, advisable; some commanders and executive officers will keep the ship always flooded with water, only to be suspended while the drying-stoves are exhaling their irrespirable if not mephitic gases. While others, abhorring water, confine their cleaning to the dry scouring of the holy stone. There are yet others, who, in my opinion, have hit that *juste milieu*, that is of more value than the philosopher's stone; they neither forswear sand nor water, but when the weather is bright, warm, and clear, and evaporation prompt, they resort to the deluge. Under other circumstances, when cold, raw weather prevails, or there is rain, they content themselves, and promote the health and comfort of the crew, by dry cleaning.

That great model of a naval commander, Lord Collingwood, gave great attention to the means of preserving health among his men, and he was rewarded with the most remarkable success. I will cite, in conclusion, a few instances. H. M. ship *Venerable,* eighteen weeks at sea, very rotten. On sick list *none.* October, 1803. H. M. ship *Ocean*, off Toulon, May 15th, 1808. "Long time at sea, never getting fresh beef, nor a vegetable; not one man sick." Memoirs, p. 265. "His flag-ship had usually 800 men; on one occasion was more than a year and a half without going into port; during that time, never had more than six, and generally but four on the sick-list.

This result was occasioned by attention to dryness (for he rarely permitted washing between decks), frequent ventilation of hammocks and clothes, circulation below of fresh air, &c. &c.," *Memoirs*, p. 266.

It must be remembered, however, that Lord Collingwood was cruizing in a temperate, healthy region, and not upon Indian, Mexican, or African seas; still, the citations above must be admitted to be most remarkable, and highly worthy of attention. If equal success cannot be obtained by the same means, we might at least hope for a desirable approximation.

Art. XII.—*Case of Congenital Deficiency of the Superior Portion of the Cranium.* By John W. H. Trugien, M. D., of Portsmouth, Va.

H———, aged forty-six, native of Ireland, County of Mayo, married, and the mother of twelve children, all of whom were well formed and perfect, after a gestation of nine months, during which nothing unusual occurred, was seized with labour-pains, at 1 o'clock P. M., June 5th, 1849, and at 4½ o'clock P. M., was delivered of a fine (with the exception of the particular deformity, of which mention is about to be made) female child. As is customary, in our southern country generally, a woman was called upon to preside at the birth of the child; and, consequently, nothing could be ascertained very satisfactory of the phenomena of labour—the relative duration of the different stages, &c. On examining, with the view of detecting the presentation, the strange feeling communicated to the finger of the midwife by the fœtal head, surprising and alarming her, caused her to send for a physician. The second stage of labour was fully commenced when he arrived; the os uteri fully dilated, the head presenting (position not stated), and the arm protruding by the side of the face. The bag of waters was now ruptured by the finger of the accoucheur, and the arm pushed back into uterus, when the head descended regularly, and the child was delivered in due time. It was then found, on examination, that the calvaria or vault of the cranium was entirely deficient, presenting the appearance of having been cleanly sliced off with a knife, on a level with the temporal ridge all around, commencing in front at the superciliary ridges of the frontal bone, extending thence through the parietal and occipital behind, down to the level of the superior semi-circular ridge. The space thus left deficient, was covered by a transparent membrane, through which the brain could be distinctly seen, of a bright scarlet colour. It was deeply interesting to witness the movements of the brain, which were synchronous with those of the respiratory apparatus; the cranial mass rising during expiration, and sinking during inspiration. The parts of the brain exposed to view, were the anterior, middle, and posterior lobes. The spinal column was perfect throughout, and, as before intimated, with the exception of this deformity, the child was perfect in all its parts. Pulse about 130 in the minute. Aspect of the face very singular and expressive, resembling more that of an old woman than a new-born babe. The eyes looked unusually large; the pupils dilated, and the eyelids constantly closed. The child cries, but does not nurse, refusing the nipple when applied to the mouth. Owing to the ignorance of the parents and friends, and their superstitious notions, such an examination as we could have wished, was not to be had. Some measurements of the body and head were, however, made, and are as follows:—

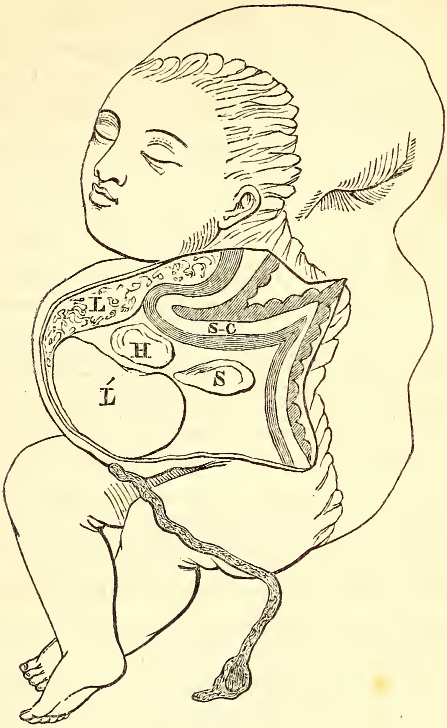
	Inches.
Length of child, from vertex to heel	15½
Circumference of head	8½
Fronto-mental diameter	3½
Length of opening in the cranium	3
Breadth	2

The child lived forty-eight hours only after birth. No post-mortem examination was allowed.

Art. XIII.—*Case of Monstrosity. Deficiency of posterior parts of Cranium and Spinal Column—Deformity of Genital Organs, &c.* By J. E. Breed, M. D., of Smithville, Jefferson County, New York. (With three wood cuts.)

The enclosed sketches were taken from a monster, the product of a third pregnancy; and thinking the case a novel one, I send it to you for publication. At the full time, preparatory pains commenced at 2 P. M., and at 11 P. M. the waters were discharged, without much apparent hastening or advance of the child. Upon examination, no child could be felt; but, instead, a firm bag containing fluid, and which for a time was thought to be the natural bag covering the child. The next pain, after the examination, was followed by a gush of fluid, which deluged the couch, and ran down along the floor. The child advanced immediately, and labour ended at a quarter past 11 P. M. I had made a minute examination of the organs of generation, of the sac, brain, and spinal cord, when I was obliged to leave, and therefore hastily examined the viscera of the abdomen and chest; this will account for any want of minuteness in the sketch or description. The posterior part of the cranium and spinal column was hid by a loose sac, formed by the membranes covering the brain and cord, and the external integuments. The sac had an extensive laceration on the left side, nearly on the level of the ear, as shown in the accompanying figure (Fig. 1), and through this rent the fluid had found exit. The brain was shrunken and compressed, and the spinal cord was wasted, and in places in loose bundles, having, no doubt, floated in the fluid of the sac. The posterior walls of the brain and spinal canal were absent. The anterior wall of the canal and the lateral bones of the cranium, were deficient in some degree of bone, and were covered by a calcareous deposit, as was also the internal face, of the sac. Upon examining the organs of generation, there was found to be a proper left labium, while the right seemed rather like a half scrotum, and was found to contain a perfect testicle, with a duct communicating with the urethra near the bladder. I say communicating, but I could pass my probe only about two-thirds of the way from the testicle towards the urethra, on account of its size. Instead of the proper lining of the right labium (or scroto-labium) on its internal face, there was a very delicate and thin membrane, covered by a net-work of blood-vessels. The vagina was distinct, though distorted, and within was a uterus with all its appendages in situ, and of the usual size, with the deviation that the right ovarium and Fallopian tube were rudimentary, yet

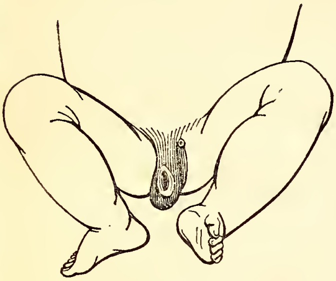
Fig. 1.



L, lung. L′, liver. H, heart. S, stomach. S—C, spinal canal.

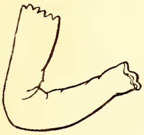
distinct. The neck of the uterus was also elongated somewhat. There was no penis, and the urethra was like a hard cord, with the meatus opening high upon the pubis, as shown in the accompanying figure. (Fig. 2.)

Fig. 2.



The abdominal and thoracic viscera were compressed and pushed forwards as exhibited in the figure. I did not notice any other deviation in them. The spinal canal was very much distorted (see Fig. 1), and many adhesions were present, and bands of fibres passing from the anterior to the posterior lining of the abdomen. The upper limbs were very small and deformed, being without fingers and thumbs, the right without any elbow joint, or at least nearly immovable and bent (see Fig. 3). The lower extremities were of full size, and of good shape. The bones of the face and the ribs, sternum, &c., appeared to be as well developed as is natural. The anus was in its usual place, and communicated freely with the bowels. The placenta was rather small, otherwise natural. Midway on the cord was a cartilaginous knob or tumour, with a trace of the same deposit noticed on the sac. The mother states that she did not observe anything amiss or different from usual in this pregnancy, unless that, when there was unusual motion, sharp, stitch-like pains were felt in the small of the back and on the pubis. She had a rapid recovery, and remains healthy.

Fig. 3.



In the sketch, I have endeavoured to show the distorted appearance of the spinal canal, and the absence of the posterior wall. The parts were so mutilated by the dissection that they were not preserved.

REVIEWS.

Art. XIV.—*Experimental and Practical Researches on the Structure and Function of Blood Corpuscles; on Inflammation, and on the Origin and Nature of Tubercles in the Lungs.* By William Addison, F.L.S. (Transactions of Provincial Medical and Surgical Association, Vol. XI. p. 233.) London, 1843.

The Actual Process of Nutrition in the Living Structure demonstrated by the Microscope; and the Renewal of the Tissues and the Secretions from the Blood thereby illustrated. By William Addison, F. L. S. (Transactions of the Provincial Medical and Surgical Association, Vol. XII. p. 235.) 1844.

On Healthy and Diseased Structure, and the True Principles of Treatment for the Cure of Disease, especially Consumption and Scrofula; founded on Microscopical Analysis. By William Addison, M. D., F. R. S., Licentiate of the Royal College of Physicians. 8vo. pp. 320. London: Churchill, 1849.

The employment of the microscope in the study of general anatomy and physiology, has not only subverted previous classifications, by enlarging our acquaintance with these branches of medicine, but has greatly modified our knowledge of various pathological processes. This result has been accomplished in two ways, viz.: by direct observation, and by inference. All that is positively known to be true, has been acquired by the former means; much that is merely plausible or really false, by the latter. Microscopy is eminently a science of observation; the information it affords does not differ in kind from that we receive through the eye alone, and its province is not to take the place of, but to assist the sight. Now, with the eye, the size, form, colour, and grouping of bodies are recognized; and, if anything more be known, it is by means of comparison with previously ascertained facts of the same sort, or with the subjects of the other senses. The best lens cannot reveal to us more of the constitution of matter than the above-enumerated qualities, as they are seen in its minute particles; their origin, transformations, and destination, are not objects of sight. If an additional reason were necessary, why we cannot study the changes taking place in microscopic elements, it would be apparent from the reflection, that nearly all microscopic observations are made upon matter withdrawn from the sphere of vital influences, and, even where it is possible to inspect parts still preserving their connection with the living animal, the magnifying power used is necessarily so low as to preclude the minute investigation which is obviously required. It is true that, by the employment of chemical substances, or of water alone, certain changes will take place in the elementary composition of the fluids submitted to inspection, and the phenomena so produced may simulate the natural transformations; but there can be no doubt that a spontaneous vital metamorphosis or growth of a cell-organism has not yet been really seen.

We may examine the constituent cells and granules of pus, or tubercle, or cancer, and it is possible that, at some future period, a unanimity of opinion may prevail among microscopists, as to their characteristic elements; the presence of abnormal particles in the urine, the saliva, mucus, and other secretions, may be detected; but the spontaneous changes of a single pus, cancer, or tubercle cell, or the development of a solitary crystal in the organic fluids has not yet been observed by any microscopist. This fact, we would repeat, is not due to the imperfection of our instruments, but to the imperfection of all observation. It appears to us of the greatest importance that the real province of the microscope should be kept constantly in mind, and that we should be able to determine where observation ends and inference begins. For it is owing to the want of this discrimination, that some of the greatest errors have been introduced into microscopic anatomy. The number of microscopic observers is, comparatively speaking, so small, that we are deprived of those safeguards against the propagation of error, which, in other branches of medical investigation, are provided by the simultaneous labour of numerous individuals. And since, also, it is much easier to propagate errors than to eradicate them, the evil tendencies of the neglect of this precaution, remain for a long time unchecked. Hence it is that the microscope has fallen into discredit with many; hence the conflicting opinions, the contradictory statements, the irreconcilable theories which obscure the truth in this department of science. If we had now a record of all that microscopists have really seen, separated from their conjectures and assumptions, we should possess therein a fund of positive knowledge of inestimable value, in the further prosecution of similar researches, but, in its present condition, the microscopic history of morbid products is a perplexing labyrinth.

Henle has remarked, that it is not correct to attribute the errors of microscopists to the optical illusions which sometimes may mislead them; but that the fault more frequently lies in the incorrect interpretation of that which is correctly seen. If, for instance, fibres be seen upon the field of the microscope, and they are assumed to be of a muscular character; or, if the molecular movements in liquids be taken as evidence of the inherent vitality of the particles under examination, the error does not arise from the object not having been seen aright, but from its being wrongly explained. The judgment is in fault, although the eye has not been deceived. It is not our purpose to illustrate the remarks above made by a reference to the present condition of microscopic anatomy and physiology, but, as they have been suggested to us by the treatises which stand at the head of this article, it is in them that we propose to look for examples of the fatal effects which ensue from the forgetfulness of true principles. Müller (*Physiology*, Am. ed. p. 469) has very correctly said, "The process of nutrition is not an object of microscopic observation." Dr. Addison, on the other hand, proposes to demonstrate a "microscopical theory of nutrition," and he anticipates "that the science of medicine is to be hereby established upon a surer and more philosophical foundation, in consequence of which, we shall be enabled to extend our remedies, and suggest new physiological methods of treatment for the maladies of mankind." The anatomical lesions of consumption and scrofula, as well as incidentally of other diseases, it is the object of this theory to explain; together with the causes, symptoms, and treatment of the above-mentioned maladies. It will appear further, what success this endeavour has met with; but we must first follow Dr. Addison, in the observations upon which his theory purports to rest.

In this system of nutrition, the principal part is played by the lymph, or colourless corpuscles of the blood; indeed, these bodies seem to have attracted Dr. Addison's attention, to the exclusion of its remaining constituents. They are not only concerned in the nutritive process, but are the sole agents by whose instrumentality it is conducted, and as inflammation is regarded by our author as merely an exaggerated nutrition, the metamorphoses which they undergo, determine its character and duration. Dr. Addison's object is, to demonstrate the proposition, "that all the textures of the body arise from the metamorphosis of cell-organisms in the embryo; that they are nourished by the metamorphosis of cell-organisms in the blood; and are displaced, interrupted, or go back again to cell-organisms, in scrofulous disease, phthisis, and ulceration." The doctrine of the formation of the tissues directly by the blood-globules was first proposed by Doellinger, but received assent only from a very few of his cotemporaries and followers. No one has, since his time, been able to confirm his observations, and we are hence warranted in the supposition, that his error was due, either to the imperfection of his microscope, or to that desire to introduce a new and startling theory, which has always been productive of so much mischief in retarding the real progress of medical knowledge. In our own time, however, it may be said that Dr. Martin Barry has advanced essentially the same doctrine. (*Philos. Trans.*, 1841, 2, 3.) He states that the blood-globules of mammalia not only have *nuclei* (which we may be allowed to remark is in direct contradiction with the statements of Gulliver, Wagner, Owen, Donné, Henle, Vogel, and Duckett), but that the nuclei contain, coiled up in a disk, filaments which have the faculty of unwinding to form fibres, and thus contribute to the formation of the tissues.

We allude to the similarity between the opinions of Dr. Barry and those of our author, merely for the sake of calling attention, at the same time, to their disagreement upon the comparative importance of the red and the white corpuscles of the blood in the scale of organization, and in the process of nutrition. While Dr. Barry attributes all the processes described by him to the *coloured* globules, which he regards as derived originally from the colourless, or "parent cells," Dr. Addison, on the other hand, holds that the latter are more "complexly organized," and are higher in the scale of development than the former; and he looks upon them as the foundation of the tissues, and the "special secreting cell." He says: "The *colourless* corpuscles of the blood are very highly organized cells, within which the special tissues and secretions are elaborated; and it appears that the renovation of these tissues and secretions from the blood does not take place by the cells discharging their contents into the general mass of the circulating current, to be separated therefrom by some peculiar transcendental and hypothetical selective process of exudation, through a structureless and transparent tissue, but by being themselves attached to, incorporated with, and performing their special function in the structure." (*Trans. of Prov. Med. and Surg. Associa.*, xii. 261.) It would naturally be expected that the number of colourless corpuscles should bear some proportion to the numerous and important functions which, according to the above extract, they are destined to fulfil. Now their number in the blood is so trifling, compared with the red globules, that they have very often been altogether disregarded by microscopists. Dr. Addison says, however, that they are very numerous in vessels actively engaged in nutrition, and although it is not apparent by what mark such vessels are to be distinguished from others, we are willing to grant that, under certain circumstances, their number may become augmented. Dr. Addison further states (*loc. cit.*, xii. 260), that he has seen them fibrillating so as to form the walls of the vessels; that they adhere to and become imbedded in them first, and contribute, with the filaments which result, to the formation of the tissues. It is at this point that we look anxiously, but in vain, for the demonstration of the manner in which these bodies, whole or disintegrated, become part of the living texture. We hoped that Dr. Addison had succeeded in tracing them further in their progress, had seen them reappear on the outside of the vessels, and devote themselves to the functions he has assigned them. But he has not been able to do more than his predecessors, and we are obliged to be content with an experiment which we find termed a "*glaring instance*" of a compact, tough, elastic, colourless, and fibrous tissue, forming from the colourless elements of the blood; the several stages of its formation being "actually seen and determined." He says (*loc. cit.*, xii. p. 244): "if blood be drawn from a person with rheumatic fever, and a drop of the *liquor sanguinis*, before coagulation, be placed on three slips of glass, at intervals of thirty or forty seconds, and then examined with the microscope, the first will exhibit colourless blood-corpuscles in various conditions, and numerous minute molecules distributed through a more or less copious fibrous network; and the last will show a tough, coherent, and very elastic membrane, which cannot be broken to pieces, or resolved into smaller fragments, however roughly or strongly the two pieces of glass be made to rub against each other." In a second experiment, the corpuscles, *after the addition of a drop of water, or of liquor potassæ,* were seen to rupture and discharge their contents, leaving molecules, granules, and filaments, upon the field. In like manner, the formation of the buffy coat of inflammatory blood, is explained upon the supposition that the colourless blood-corpuscles, which, in inflammatory diseases, are found to become more numerous, rupture from the sudden change of temperature, or from other causes, and discharge their contents, consisting of liquor sanguinis and molecules; the liquor sanguinis then rises, drawing with it the molecules and corpuscles not yet ruptured, and fibrillates "as it would have done in the living vessels, had the contents of the corpuscles been appropriated to the purposes of nutrition."

It may justly be inferred from the foregoing extracts, that our author holds the opinion, that the coagulation of blood removed from the body, represents the process of fibrillation, or the formation of fibrous tissues within it, and that, in both instances, the changes which take place are due to the disintegration of the colourless corpuscles of the blood. We will not repeat here the objections which have been already made to the endeavours to establish a theory in any other way than by direct demonstration; but the argument before us is not unlikely to mislead some, under the idea that the point in question has been actually demonstrated. There is, however, no parallelism between the phenomena which Dr. Addison endeavours to assimilate; for manifestly, the changes which take place in blood, after being removed from the vessels and left undisturbed to the operation of physical laws, cannot be brought into comparison with the vital processes which are constantly in play in the living body. These phenomena are assumed to be similar, because, in the experiments above given, a so-called "membrane, tough and elastic," was formed. However much the buffy coat may resemble an "elastic fibrous tissue" under the microscope, it certainly presents no such appearance to the unassisted eye, and, in the rapidity of its formation, is very unlike the normal membranes of the living body. In fact, these experiments bring Dr. Addison somewhat into contradiction with himself; for, when assigning a reason why the nutritive process, as described by him, cannot be seen in the irritated web of a frog's foot, he says that the changes are, in this example, too *slow* to be followed; that the corpuscles go on congregating in the irritated tissue for an hour or two, but that, "if the part were patiently watched for a sufficient length of time, *it is very possible* that still more of the process might be seen." Yet so expeditious is the nutritive process *outside* of the body, that we have, in coagulated fibrin, "a glaring instance of a compact, tough, elastic, colourless and fibrous tissue, forming from the colourless elements of the blood," in a few minutes.

Moreover, much of the novelty attaching to Dr. Addison's theory of the exclusive function of the colourless corpuscles in nutrition is lost, by his declaration that they contain the *liquor sanguinis* and become instrumental in promoting the growth of the tissues only by their rupture and the discharge of their contents. Now, according to the general belief of physiologists,—in opposition to which there are no objections, and which cannot at least be disproved, if it cannot be demonstrated,—the body is nourished out of the plasma of the blood, or the *liquor sanguinis,* which transudes the walls of the capillary vessels, and the various secretions are formed and elaborated by the organs, in conformity with laws whose operation it is not in the power either of chemistry or the microscope to unravel. But Dr. Addison creates for himself very unnecessary difficulties, by enclosing the *liquor sanguinis* within the corpuscles and thus rendering its escape from the vessels impossible. And indeed, he goes even further than this, for notwithstanding the comparatively small number of colourless corpuscles in the blood, he says (*loc. cit.,* xii. p. 248), "Neither the fibrinous element nor the serum circulates in the blood as part of the fluid in which the red corpuscles are suspended in the living vessels; they are both enclosed within, and form, incorporated together, an essential ingredient of the interior contents of the colourless corpuscle." What, then, it may be asked, is the nature of the liquid in which the corpuscles move when in the living vessels? It is impossible to determine; for it cannot be procured for experimental examination, without being mingled with corpuscles; nor, according to these views, without some of them bursting and mingling with it their own contents. Perhaps no better instance than the above could be found, by which to exemplify the indifference to consequences which the zealous theorist entertains. It would seem that a moment's reflection would render the untenable nature of the above proposition so manifest, that it is a matter of great surprise to us, how it could ever have been seriously advanced, for it not only has no facts to sustain it, but is intrinsically absurd. For, as the blood is constituted of the corpuscles and the *liquor sanguinis,* and the latter of water, holding fibrine, albumen, and numerous salts in solution, if it were possible to separate the fibrine and albumen from the other elements, and enclose them within the colourless corpuscles of the blood, we would have two fluids of different densities separated from each other by the delicate coat of the corpuscles. The necessary consequences of this condition of things would be, that an interchange of elements would immediately commence, according to the laws of endosmosis and exosmosis, and the contents of the globules, and the liquid in which they swam, would very soon acquire the same specific gravity.

The views entertained by Dr. Addison, of the constitution of mucus and pus, deserve notice here, as forming an essential part of his theory of nutrition. In the outset, mucus is supposed to bear a remarkable analogy to the liquor sanguinis at the surface of buffy blood. (*Loc. cit.,* p. 248.) The latter "is a plastic fluid, containing numerous molecules and colourless blood-corpuscles; and when the fluid fibrillates, it incorporates the molecules and unruptured corpuscles, forming tissue." The former "is a glairy, semi-fluid tissue, containing numerous molecules and colourless mucous globules; mucus frequently exhibits a copious and distinctly fibrous character or structure, and always does so when a *little dilute acid* is added to it, an addition which cannot form the fibres." An experiment was made upon some mucus from the nose; it became whitened by the addition of a drop of dilute acetic acid, and "its fibrous structure was rendered very evident." A drop of healthy pus, when mixed with liquid potassa, lost its opaque character, and became clear, transparent, and tenacious, resembling mucus, an appearance which was found to be owing to the rupture of the corpuscles; but, upon the addition of a little dilute acetic acid, it resumed somewhat of its former white aspect, and being pressed into a thin film, under the microscope, showed "as copious a fibrous structure or character as the fibrillated liquor sanguinis."

These experiments, Dr. Addison thinks, set at rest the question of the difference between pus and mucus, prove the identity of mucus and pus globules, and show them to have a common origin in the colourless corpuscles of the blood. It does not appear to us, that our author is warranted in the inferences which he deduces from these experiments. It is hardly allowable to claim identity of character for two organic products, on the ground that they may be brought to resemble each other in one property, by the application of chemical reagents, whose mode of action upon them is unknown; and much less that any argument for their common origin can be drawn therefrom. The acknowledged difficulty of distinguishing the mucous from the pus globule, under the microscope, has never before, as far as we are aware, been made a ground for assuming them to be identical; for if this were to be made a test of the character of microscopic objects, it would be just as correct to assume all primitive cells to be similar in nature, because they happen to be so in appearance. The actual constitution of granules, nuclei, and cells, is not ascertainable by these means, and the employment of chemical substances to disintegrate or alter them in any way, so far from elucidating their nature, serves only to render the solution of the problem more difficult. Moreover, a candid investigation of the actual relations of mucus and pus would seem to require, that the inquiry should not be restricted within one method of observation, but that they should be carefully compared with the results and facts already known. In this manner many facts, obtained by microscopic observation, have been confirmed, and their real truth and importance established. But, in this case, we find, that our previous knowledge conflicts seriously with the inferences which Dr. Addison would draw from his observations. Mucus is a normal secretion, peculiar to certain membranes of the body, when in the healthy condition; while pus, on the other hand, is the product of disease. We do not find the former replacing the latter, except in those membranes whose province is to secrete it, and only after the inflammatory condition has entirely ceased. Nor do we see pus replace mucus, unless inflammation first takes place. For inflammation is evidently not an exaggeration of the nutritive process, and the difference between its products and mucus is merely quantitative, since it is precisely during its continuance that normal nutrition is suspended; the increase in bulk which occurs in inflamed parts being due to effusion of blood-plasma into the tissues, and not to an increased development of the elements of the tissue which would constitute a true hypertrophy. Hence, if mucus, which is a normal secretion, does not represent an earlier stage of pus, which is the result of inflammation, a fortuitous resemblance of its microscopic elements to those of pus can hardly be looked upon as sufficient reason for the rejection of the evidence of our senses and previous knowledge; nor can we conclude with Dr. Addison, that the chief distinction between mucus and pus arises from the number of unbroken cells in the latter, with imperfectly elaborated contents, while the peculiarity of mucus and other healthy secretions is due to the disintegration or opening of the cell, and the discharge of its contents. We may add, that Dr. Addison is not supported in his views of the identity of the microscopical elements of these secretions by other observers. Hodgkin, Vogel, Valentin, Guterböck, Henle, and many others of equal authority, have been content to own the difficulty of laying down any fixed character as peculiar to either of these products; the inferences which Dr. Addison has considered himself warranted in drawing, are peculiar to him, and have been neither suggested nor confirmed by any other microscopist, although several years have passed since their first publication.

The objections which we have made to the explanation of the processes of nutrition and secretion, by a description of the changes which are supposed to take place in the coagulation of blood, and to the mode of determining the relations of pus and mucus, have involved, for the time, a tacit concession of the truth of an assumption, which still remains to be proved. This is, the passage of the *colourless* blood-corpuscles through the walls of the vessels. The *red* globules, although smaller than the others, have not the same faculty granted to them. This passage is, according to our author, the first step in the process of nutrition, and we may add that, without it is fully demonstrated, the whole system falls of itself to the ground. It is incumbent upon Dr. Addison to demonstrate it, if he would invite belief in the propositions advanced by him; and, until this were done, we might very well dispense with any examination into its correctness. But Dr. Addison owns his inability to prove the passage of any of the blood-corpuscles through the vessels, and that he has not actually seen it; yet, at the same time, he says (*loc. cit.*, xii. p. 264), "In normal nutrition, they adhere to the tissue forming the boundary of the blood-channels; they *pass into* and contribute to form the tissue, and are afterwards evolved or thrown off from the nearest surface, a follicle, crypt, or duct, constituting epithelial cells;" also, "the facts contained in these researches, with others, which have for some time been accumulating from other sources, are quite incompatible with the doctrine, that all the blood-vessels have *permanent tubular coats.*" It will be at once seen, that the establishment of this fact would be fatal to Dr. Addison's theory; but few will be found to assent to such an inversion of all principles of induction as that, because facts will not support a theory, they may be disregarded in order that it may stand. An incompatibility of facts with opinions, is a singular argument for the validity of the latter.

If it be proved that the capillary vessels are provided with independent walls, it is clearly impossible that bodies of the diameter of the blood-corpuscles, whether red or white, can pass through them; for it is well known that some of these vessels are so exceedingly minute, that it has been a matter of doubt whether the blood-globules circulated through them at all, for which reason they received the name of *vasa serosa.* Their area was found to be too small to permit the passage of the corpuscles, and it has since been discovered that it is only by means of their elasticity that these bodies, in elongating themselves, can penetrate them. This being the case, how is it possible to suppose that corpuscles with a diameter of $\frac{1}{2000}$ to $\frac{1}{500}$ of a line, can get through their interstices, which cannot of course compare with the diameter of the vessel itself. Dr. Addison has divided the capillary vessels into two classes, the fibrous and the corpuscular, with some of a mixed character between the two; the first are found chiefly in the serous membranes, the others in those organs or structures which are termed corpuscular. This we are to understand as "expressive of the soft, friable, parenchymatous texture formed of elaborating cell-organisms, the term cellular being limited to those which are coherent, non-elaborating, and elastic;" the liver, brain, and intestinal villi are examples of the one, the lung is a specimen of the other. By a "corpuscular capillary" is meant one that is "bounded by the special elements of the texture, having walls consisting of cell-organisms." In other words, there are capillaries which have walls of their own, and there are others which have none, but are merely channels in the tissue. Yet the process of nutrition is, according to Dr. Addison, accomplished by the transit of the corpuscles through the coats of the vessels, and, we would add, that it is apparently conducted in the same manner in all parts of the body. Hence, those structures which are not provided with the corpuscular capillaries, are entirely cut off from any means of nourishment and growth. If we turn, however, to the works of other physiologists who have examined this point, we will find nothing to substantiate the theory which Dr. Addison endeavours to maintain. Henle (*Allgemeine Anatomie*, S. 537) says that, apart from the reasons we have, from observation of the steadiness of the current, to believe that the capillaries are not merely channels in the tissue, the existence of independent walls has been proved by the complete separation of the capillary network from the parenchyma by maceration. This fact has been demonstrated by Windschman, in the plicated organ of the cochlea of the ear in birds; by Müller, in the cortical substance of the kidney of the squirrel; by Valentin, in the villi of the small intestine, and by Schultz, in the plexus choroides of the brain. Treviranus isolated the capillaries of the brain, and describes their tunic as being of an homogeneous structure. Berres (*Anatom. Microscop.*, Viennæ, 1837), in his great work upon the microscopic anatomy of the capillaries, has demonstrated that they are disposed in the various organs of the body, according to a system which is, in similar organs, constantly uniform and peculiar; and he says, further, that they all possess an independent membranous wall, which he terms the "*membrana polita s. glabra.*"

Wagner (*Physiology*, p. 288), in like manner, avers that the finest vessels have always distinct parietes, constituted of a simple membrane of great tenacity, and generally structureless, and that even circular fibres are discernible in those of $\frac{1}{500}$ to $\frac{1}{1000}$ of a line in diameter. Schwann also describes these circular fibres in the capillaries of the mesenteric vessels of the frog. Hyrtl (*Handbuch der Anat.*, S. 94) says that the finest capillaries, viz. of $\frac{1}{2000}$ of a Viennese line in diameter, possess a simple structureless coat. This, he adds, is so thin and transparent, that, in the living structure, it can be seen only by means of the blood circulating through it, and that it is permeable only for the fluid constituents of the blood. Bischoff (*Entwickelungs Geschichte*, S. 273), in his observations upon the embryos of frogs and fishes, has often observed that, in a capillary loop, the walls of which are visible, not a single corpuscle will, for some time, pass. Suddenly, however, one will enter from the neighbouring vessel, and be soon followed by others. This circumstance, he remarks, may very easily give rise to illusions with regard to the existence of independent walls to the capillary vessels. Direct and demonstrative proof, like that which is here cited, must outweigh a volume of negations; for, as we have seen, Dr. Addison brings no evidence, drawn from observation, in support of this part of his theory. We might, indeed, have declined adducing testimony in favour of what has good claim to be considered an established fact, until proof of the same nature had been produced in opposition to it; but, in view of the plausibility of the system of nutrition advanced by our author, it seemed proper to place a brief sketch of the actual state of physiological knowledge on this point before those who might be otherwise misled.

The last work of Dr. Addison contains the further development of his system of nutrition, and its application to the pathology of consumption and scrofula. It is divided into chapters, which are termed respectively, Practical Physiology, Pathology, Psychology, and the Symptoms, Causes, and Therapeutics of Consumption. It would require a far more extended notice than we think warranted by the nature of its contents, should we undertake an analysis of this volume. The disregard with which the observations of the most eminent authorities are passed by, except when they happen to coincide with our author's views, would be of itself a sufficient cause to awaken distrust in the mind of any impartial student. But it is the remarkable fallaciousness of the reasoning, which is the prominent characteristic of this work. It may be called bold, and, by the superficial reader, plausible, but we think that, had it emanated from any one of less authority than Dr. Addison, it might be characterized in less equivocal terms. That portion of the work devoted to the therapeutics of consumption and scrofula, contains, as might be expected, little of novelty for the practical physician. The details of cases, given in the language of patients of evident refinement, although occupying more space than is usually allotted in scientific treatises to such communications, are very readable and interesting. In the chapter upon the etiology of consumption, there is a fair specimen of the mode of reasoning in which Dr. Addison seems to excel; we refer those who may wish to discover the reasons for believing "*atelectasis pulmonum*" to be the principal cause of consumption, to examine for themselves, as the argument by which this doctrine is supported does not appear to us to be susceptible of analysis.

We have, however, a few words to say of Dr. Addison's pathology, in a more general sense. For him, the usual division of diseased products into homologous and heterologous, has no existence; tubercle is not anything different from the normal structure of the human body. Inflammation and tuberculization are merely different stages or phases of one process; the material effused in pneumonia does not differ from tubercular infiltration, except in its being absorbed (page 52), or becoming capable of absorption; and a hepatized lobule may not be distinguished from a semi-transparent granulation, except that the one is recoverable and the other is not. The whole system rests upon the "conformable" or "unconformable" changes of cells (*i. e.*, the colourless blood-corpuscles). The natural order, according to which the tissues are developed, is from cells to fibres, cartilage, and bone. The first represent the "embryonic," or corpuscular structure, the latter, the adult or fully formed structure. If, now, the elements characteristic of the embryonic structure appear among, and take the place of those more fully advanced in the scale of development, disease is the result, or rather those forms of disease which Dr. Addison has chiefly in view, viz. consumption and scrofula. For example; if a bone be broken, and from the elements first effused after the injury callus is formed, and subsequently new osseous matter deposited, the new elements conform in all respects to the law of the texture, and the result is a cure. If, however, the "morphology" be unconformable, the nutritive matter effused does not undergo the necessary transformations, and the fracture remains ununited; for, by the words "unconformable morphology," we are to understand, an indisposition upon the part of the cells, with their plastic contents, to resolve themselves into fibres, cartilage, and bone. But it is not easy to see what real explanation of a morbid process this can be. For, if a fractured bone does not unite, nor a wound heal, it is, perhaps, not incorrect to say, that the morphology is unconformable, but it is no explanation *why* the reparative process does not take place. The use of these words is, therefore, only suited to lead the unobservant to believe that they know thereby more of the condition of the parts in question than they did before. It is, moreover, a matter of surprise that Dr. Addison should have fallen into so common an error, when he subsequently, in another place (page 74), himself stamps it with its true character; he says (page 33), "We frequently see children falling away without evident cause, and we have found parents quite satisfied when told it is an atrophy—an expression conveying not one whit more information, either to the physician or the patient, than what is known to every casual observer."

The so-called "retrograde metamorphosis" forms, however, a more essential portion of our author's pathology. "Villi, papillæ, follicles, and granulations are," he says, "characteristic of the mucous tissue." "In the embryo, all tissues being corpuscular, it is some time before any distinction between mucous and serous textures exists." "In the adult serous and fibrous textures, there are no granulations, villi, or follicles, as in the mucous membranes; but, when they are attacked by inflammation or scrofulous disease, they assume a granulation or villous state, concomitantly with a change in the elements of the walls of the vessels from simple fibres to cell-organisms. This is a retrograde metamorphosis—a condition analogous to the embryonic state." (Page 35.) It is possibly true, notwithstanding recent investigations have thrown doubt upon the fact, that the corpuscular tissue lies at the basis of all others, or, in other words, that nerve, fibre, bone, and every organized tissue, are originally derived from a cell. In this sense, it may be justly termed an embryonic structure, if we first clearly understand that a corpuscular and a mucous tissue are not necessarily one and the same, as Dr. Addison inculcates; for it does not by any means follow that, because mucous membranes are mainly corpuscular in their arrangement, therefore all tissues of a corpuscular character are mucous tissues. In the adult, the mucous membrane is as much a permanent and perfect tissue as is any other; and, if it may be called embryonic in any sense, it certainly cannot be in that of its being imperfect, for, in the words of our author, "the corpuscular textures hold a higher rank, have more activity than the fibrous, the mucous than the serous" (page 38); and yet, with singular inconsistency, the appearance of this texture among fibrous structures is termed a *retrograde* metamorphosis. We are told that, "in consumption and scrofulous disease, cell-organisms, characteristic of the embryonic structure, and of blood, reappear amongst and supplant the elements characteristic of the healthy adult texture;" and again, "retrograde metamorphosis occurs when the form and qualities of a texture are completely changed by the intrusion of elements distinctive of a *prior or lower* type." (Page 20.)

Dr. Addison quotes the observations of Guillot, and of Schrœder Vanderkolk, in reference to the supplementary circulation in tuberculous lungs; but with the exception of a coincidence in the employment of certain words, it is difficult to see what support the peculiar pathological system under discussion can derive from them. The tufts of new vessels, seen upon the walls of a tuberculous cavity, present, when viewed by a common lens, a "sort of villous structure," and there is a vascular network surrounding these cavities and connected with the aortic system. The authors above named, make use of the word *villi* only as a means of illustration, whereas Dr. Addison understands thereby all structures of an embryonic character, or imperfect in development. They, as well as all other writers, speak of semi-transparent granulations as an early stage of tubercle; but in Dr. Addison's work, "granulation" is but one of several terms by which structures composed of "cell-organisms" are designated. It is from the similarity of their elementary or microscopic composition, that our author considers himself entitled to make use of them as convertible terms, and to confound the granulations of a healing wound and the villi of a mucous surface with the products of tubercular disease. Dr. Addison says that his post-mortem examinations establish the facts, "that the growth of corpuscular granulations or villi, in the serous and fibrous textures, is the primary change; the transformation of these granulations into opaque tubercles or tuberculous matter is the next, and the retrogradation of the natural textures surrounding the tubercles are the essential phenomena of consumption, the indispensable anatomical change of phthisis." (Page 63.) "It would appear," he also states, "from the frequently stationary character of pulmonary tubercles, from the absence of any active nutritive function in the texture around them, from their degenerated structure and want of vascularity, that they are blighted granulations." Now we would ask, what resemblance does the tubercular granulation, which is a semi-transparent, unorganized morbid product, bear in its origin, course, or destination, or in its pathological significance, with the vascular, secreting granulation of a healthy surface, or of an ulcerating wound? None, except in its granular form and in its microscopical characters; cells entire or fragmentary being found in both. If its form be a sufficient reason, the miliary tubercle might as well be termed a millet-seed, as a granulation; and with regard to its microscopical characters, it is very certain that no one can be justified in assuming the presence of microscopic cells, in structure and products otherwise totally dissimilar, as indicative of a common origin, or a common character. We are at a loss, also, to understand what can be meant by a blighted granulation! The reasons assigned as warranting the use of this appellation in the case of tubercle, might with equal justice be applied to any other stationary morbid product or tumour. A lipoma, a simple fibrous, or an encysted gelatinous tumour, or a scirrhous deposit, might likewise be said to be composed of blighted granulations, on account of the absence of nutritive energy in the surrounding texture, their degenerate structure, and want of vascularity.

We have endeavoured, as far as was consistent with the necessarily limited space of this article, to place fairly before our readers Dr. Addison's theory, and the observations and hypotheses upon which it rests. The comments we have made upon it, have sprung from our disagreement with the author upon the principles necessary for the establishment of truths in this interesting department of medical science, as well as from our conviction of the fallaciousness of the reasoning by which he seeks to maintain his positions. We would not conceal our admiration of the eloquent and attractive style in which this new system of nutrition is put forth, nor deny that it is illuminated by a brilliant fancy and pervaded by a strong religious feeling; yet it is but too evident, that it owes to these very merits that plausibility, which, notwithstanding its radical defects, will recommend its adoption to the superficial reader. But the interests of medicine are now so closely linked with the progress of microscopic anatomy, that we cannot insist too strongly that the facts won by the microscope from fields before unvisited by observation should be real and not spurious, and that the rapidly advancing car of medical science should be turned from its headlong and erratic course, and conducted back into that only broad and safe highway which leads to the goal of truth.

M. S.

ART. XV.—*On Gout—its History, its Causes, and its Cure.* By WILLIAM GAIRDNER, M. D. 12mo. pp. 232. London, 1849.

THE treatise of Dr. Gairdner, though brief, and on a subject which has occupied the pens of some of the most distinguished medical writers of the present, as well as of the past century, will be read with interest and not a little profit, by every physician whose circle of practice obliges him frequently to prescribe for a malady, the pathology and treatment of which are still but imperfectly understood, and of which it may with truth be said, that "not any of the diseases to which man is liable is a cause of greater perplexity and disappointment" to the practitioner.

Although we are not prepared to assert that the author of the treatise before us has succeeded in clearing the pathology of gout from all the obscurity with which it has heretofore been invested, and in demonstrating the true theory of its causation and nature; still, his views in relation to the pathology of the disease appear to us worthy of consideration, from their greater clearness and exactness, than those heretofore advanced, as well as from the *vraie semblance* with which they are clothed by the arguments and illustrations he has advanced in their support.

We extract from the first chapter the following remarks of the author, which exhibit the commendable spirit in which his peculiar views of the disease under consideration are announced.

"In the earliest years of my professional life, my mind was frequently called to the consideration of gout; to the observation of its various forms, the unravelling of its strange and confusing associations with other known forms of disease, and meditation on its cause and nature. I well remember how often I was perplexed by its obscure indications; how often I was surprised to discover it lurking unsuspected in the system, disturbing the healthy functions, and how much I was puzzled by seeing the symptoms of other diseases swayed from their natural and ordinary course in consequence of the intermixture of gout. The records of medical science afforded a very imperfect solution of many of these difficulties. In them, indeed, were to be found laborious and often weary descriptions of the disease; its phenomena set down with a methodical accuracy, but very seldom presenting to me a picture of the facts I had witnessed, and rarely, indeed, shedding any useful light on their nature. In these minute and exact histories, the symptoms are often classed in such a manner as to exhibit the great diligence of the observer, and yet lead the mind of the reader, as little as may be, to a ready appreciation of their nature. The best arrangement we find, is that of the order of their occurrence, yet this is not always followed. It is true, as might be expected, that a practicing physician of the present day will scarcely find his attention arrested by a circumstance or symptom of this disease, unrecorded by his predecessor; yet it is equally certain, that, in the doubts which assail his mind, he will often turn in vain to their writings for the solution of his difficulties.

"I have hailed with great interest the works which have occasionally proceeded from some of our ablest physicians during my time, and particularly some writings which have, within these few years, issued from the press. But though I have found much matter of instruction in them, I have been mortified not to discover certain observations and thoughts of my own reflected in the mind of my colleagues. Recollecting that my own opinions had undergone great change, I have been led to further inquiry, and though on certain points I may feel doubts strengthened, there are others on which re-examination and reflection only bring additional conviction. What these are will sufficiently appear in the following pages. Whether my interpretations are true or false, my cotemporaries must judge. But believing it may be of use to promulgate opinions

> earnestly and honestly formed, not so much from reading as from observation and meditation, I venture, with diffidence, indeed, to add another volume to the many already written on this subject.
>
> "I shall be more readily excused for calling upon physicians to read another book, if the opinion I entertain of the great frequency of gout be correct. We are apt not to consider a man as gouty, unless he has suffered under a regular fit of the disease. I believe the gouty diathesis is often most perfectly developed in individuals who never see its local manifestations, and I am convinced that the strumous is not more frequent than the gouty habit."

The first three chapters of the treatise are devoted to a description of gout in its *regular* and *atonic* forms; the only varieties of the disease which the author admits; they alone, according to Dr. G., having a solid distinction in the nature and form of the disease.

The premonitory signs of an approaching attack of gout are concisely stated in the first chapter. Dr. G. considers it of much importance that a clear conception of them should be formed, and that they should be distinctly noted as it is at this period that remedies are most effectual; by guarding the patient from the further inroads of the disease, they are then calculated to save him from much suffering and danger.

The author's history of the regular form of the disease, through its three stages, marking its increasing effects upon the constitution, with its termination and sequelæ—apoplexy, menorrhagia, hemorrhage from the bowels, hemorrhoids, melæna, dropsy, and sudden death—is full and clear; it presents an admirable picture of gout, divested of those features which are not peculiar to it, but which mark all great disturbances of the system, being the general indications of all severe sufferings.

The description of the disease given by Dr. G., is from those cases in which its course is uninterruptedly and decidedly downwards. This was necessary, in order to present a full and correct history of gout. The author, however, warns his readers that the disease does not always fill up such a history as he has presented, and that such an array of symptoms as he has delineated, are not always, or usually present. On the contrary, he admits that the cases in which the constitution struggles well with the malady are very numerous, and that these do not occur, for the most part, in the strongest individuals.

> "Very often," he remarks, "they are found in persons of loose fibre, in whom the action of the heart is sound and unimpeded. Such persons generally have sharp and feverish attacks, attended with considerable temporary weakness. It is indeed not uncommon to see them pass through a long and self-indulgent life, with regular annual, or biennial attacks of gout, which seem to have no other effect than that of restoring the individual to the enjoyment of better health, and even to observe the disease at the close of life, when all the vital and natural powers have felt the influence of time and progress of decay, also abate in virulence, and actually cease to trouble."

We have been tempted to give a synopsis of the author's very able history of gout, when it follows its regular course, from its first faint beginnings to its conclusion, as well as of his description of the disease in its irregular and devious course, as it occurs in persons of a constitution naturally feeble, or in those weakened by debauchery and excess, or worn out by the cares, fatigues, and accidents of life; but we found that, by so doing, we should present our readers with but an imperfect outline of what cannot be well appreciated when divested of any of its details.

In the fourth chapter, Dr. G. examines the theory of the dependence of gout upon a morbific matter, which, it is supposed, the regular fit of gout eliminates from the system. The inaccuracy of this theory he points out, in a few very concise remarks. The easy and profitless explanation of a *materies morbi*, finds little countenance from physicians at the present day. Another opinion however prevails, which though it leads, as Dr. G. admits, to a sounder mode of treatment, seems to him to involve hardly less of error. This is the stomachic origin of gout, originating in the fact that symptoms of disturbed digestion are the frequent, if not the invariable accompaniment of the disease; and from its true position, as a consequence and satellite of the gout, the disorders of the stomach, upon which these symptoms depend, have been erected into a cause.

> "One of the most remarkable results of arthritic indigestion," Dr. G. remarks, "is the presence of acid in nearly all the excretions of the body. This has, of late years, been called the uric acid diathesis. The adoption of such a term would imply a conclusion, to which I am by no means prepared to assent. By a diathesis, I understand a condition of the constitution, and not a simple affection of certain fluids of the body. Undoubtedly, this acid condition is very general. Dr. Garrod has lately much extended our knowledge by a very interesting proof of the existence of uric acid in the blood. Its existence in the joints had been previously made manifest by Wollaston; Landerer found it in a concretion between the coats of the aorta; it has been discovered in several fluids of the body in a state of disease. But, admitting that these accumulated facts are sufficient to justify us in the use of the expression to which I have adverted, it could not, by any means, be called the uric acid diathesis, for it appears that various acids make their appearance in the secretions. Berthollet supposed that the acid of the sweat was the phosphoric; Berzelius and Anselmino showed it to be the lactic; Thenard found acetic. No one, too, as far as I know, has ever found uric acid in the stomach; but there seems little doubt of the presence of the hydrochloric, the lactic, and the acetic, in cases of dyspepsia. This idea of a uric acid diathesis, as the cause of gout, meets with another and a fatal difficulty, from the fact that urates in the urine are common to gout, and to many other diseases. Ordinary indigestion, from whatever cause, or a slight and ephemeral fever, will cause this appearance. Dr. Prout has, indeed, here established a solid and useful distinction between that deposit of urates which is occasional and transient, and that which is more durable. 'The lithate of ammonia in the urine, is one of the most common attendants of slight dyspepsia from errors of diet.' But the same substance makes its appearance in the urine in a less transient manner, in the course of severe diseases not of a local nature, 'when no food has been taken into the stomach, and when, therefore, its formation can only be attributed to secondary mal-assimilation of the albuminous contents of the blood, and albuminous tissues.' But I have seen, and I am sure Dr. Prout has seen, very durable deposits of urate of ammonia in cases where no great constitutional disturbance, such as lepra or psoriasis, existed; where no unusual disintegration of the tissues was going forward, and where no interruption to ordinary wholesome nourishment was suspected. But, in order to establish the presence of uric acid in the circulating fluids as the cause of gout, it would be necessary to prove that it is never absent. There is nothing, however, of which I am more perfectly satisfied than that I have often seen cases of true regular gout, in which there was no evidence of excess of urates in the urine; and the cases are not rare, in which deposits of earthy phosphates, and mixture of earthy phosphates with urates, are met with."
>
> "These are sufficient reasons for objecting to the use of so hypothetical an expression as the uric acid diathesis, and for believing that the expulsion of urates from the system through the urine, and of other acid and earthy matters through this and other excretions, is to be looked upon only as one of the many consequences or symptoms of gout."

Dr. G. believes that it cannot now be doubted, that uric acid, as well as urea, is a necessary and constant ingredient of pure and healthy blood; that though derived from the food, they are not imbibed with it, but are formed within the body, and enter the blood in the earlier stages of assimilation; and that we are yet ignorant of any useful purposes they serve, and can only consider them in the light of refuse or effete matters, which, if not duly eliminated by the kidneys, are productive of much disturbance to health. He believes that the disappearance of these substances in the urine, and their accumulation in the blood, are merely a frequent symptom and consequence of gout, which is itself, again, the cause of other important phenomena.

> "This is, indeed, the frequent cause of that general cachectic condition so often seen in gout: hence arise distressing headaches, somnolence, and indifference. It is also," Dr. G. supposes, "the origin of much of the dyspepsia with which the gouty are afflicted, and to this circumstance are to be traced those disastrous cases in which we see sudden death resulting from some violence affecting any great function of the body."

Dr. G. had, for a long time, a strong conviction that, in the altered relation of urea and uric acid to each other, would be found the explanation of many morbid phenomena, and that, in certain morbid states of the system, the nascent urea becomes uric acid during the assimilation of the food.

This latter opinion is at variance with that advanced by Liebig and Wöhler, who consider the uric acid as the parent of the urea—a supposition that is based upon very slight and inconclusive evidence, and will not stand in the way of the adoption of the view suggested in the work before us, in the support of which the author has adduced a number of apparently conclusive observations. These observations, if devoid of error, show that as the amount of uric acid in the urine is increased that of the urea is diminished, and *vice versa.*

Dr. G. believes that, in a state of health, the elements necessary for the composition of urea are separated from the blood; but that, under the influence of the gouty diathesis, the secretion of uric acid takes place with greater abundance.

After presenting the atomic composition of urea and uric acid, the author remarks :—

> "A simple inspection of these figures is suggestive of much important reflection, having a direct application to the facts of this disease, and shedding light on the function of respiration itself. If, indeed, a less perfect consumption of carbon, or elimination of carbonic acid, by the lungs, would give us uric acid in the blood, we may divine not only the origin of the urates in the gouty, but see in what way repose and indolence aid in the production of this symptom of the disease, and how exercise and air contribute to its removal. We may also readily enough understand the vicarious origin of urea and uric acid during the process of respiration, without having recourse to the improbable idea of their transition into one another at a future stage.
>
> "When we consider the atomic composition of urea and uric acid, we can easily understand the experiment of Liebig; but, more than this, we can see its great importance, and its direct bearing on the subject we are now considering. If, by decomposition, we can obtain such changed relations in the elements of uric acid as to yield us urea and carbonic acid, we can have little difficulty in perceiving that the imperfect arterialization of the blood may exactly reverse this process in the living body. To constitute uric acid, the chief change required is the addition of carbon to urea. We have already proved that these substances are sometimes correlative and vicarious; we have made it probable that, as they are found in the blood, so also there they take their origin. The subject seems now so much narrowed, that we may pronounce, with greater confidence, that, in the chemical changes which take place during the process of respiration, the two substances, urea and uric acid, are generated; and, if we scrutinize these changes closely, we may easily perceive circumstances which favour the production of one or other compound, according to the condition of the patient."
>
> "In the history of gout, I have pointed out many signs indicating that the

decarbonization of the blood is deficient. The blue lips, the swollen veins, the bloated complexion, the skin diseases, and general cachectic condition, sufficiently mark this. It is, indeed, evident in the whole natural history of the disease.

> "When the blood is perfectly oxygenated, the heart and vessels are roused to energetic contraction; but it is quite certain that, when the expiration of carbonic acid has been less copious, the absorption of oxygen diminished, and a portion of venous blood carried forward into the arterial system, the circulation is slackened, a depressing influence is exercised on the brain and nervous system, congestion takes place in the vessels, and that state of things which I have pointed out as favourable to the creation of a gouty diathesis is speedily brought about."

After noticing the various circumstances which diminish the exhalation, from the lungs, of carbonic acid—as, repose of body, sleep, confined air, intense and long-continued mental employment, anxiety and depression of mind, &c.—Dr. G. remarks, that it has already appeared to him probable that the urea and uric acid, which are constant and healthy ingredients of the blood, originate in the lungs, during the process of respiration; and that no less certain does it appear that, in some conditions of the body, and with some habits of the patient, the carbonaceous matters, which should be cast out of the system, are returned in the blood. He then asks:—

> "Can it then be wonderful that, of two ingredients, the one which is most abundant in carbon should now be formed at the expense of that which contains less; that the urates, in fact, should be found in excess in the blood and in the urine, and that the urea should suffer a very material diminution? I have measured the quantity of urine made by the patient whose case is mentioned at p. 85. It amounted to 36 ounces, in 24 hours; and as 4 parts of urea in 1000 of urine had disappeared, it follows that 68 grs. of urea were suppressed in the urine, to reappear in the system in some noxious form or other. This appears to me certainly the real origin of the urates. The injurious effect of so great a change in the secretions of the body, of the suppression of a healthy evacuation, its reappearance under a more noxious form, and of the retention in the blood of a poisonous ingredient, must be obvious to all practitioners."

Dr. G. has illustrated the correctness of this view by a comparison of the urine secreted during sleep, with that passed in the day; the condition of the urine in an asthmatic patient, breathing with difficulty; that passed during repose and during active exercise; that passed by males and females; that passed by individuals living on different kinds of food; and in this manner showing that all those circumstances which impede the activity of the process of respiration, and favour the accumulation of carbon in the blood, diminish the quantity of urea, and increase that of uric acid, in the urine; whilst all those conditions which increase the activity of the respiratory function, and facilitate the arterialization of the blood, diminish in the urine the ratio of the uric acid to the urea.

In the sixth chapter, the question of the inflammatory character of gout is discussed. Dr. G. maintains that inflammation is not essential to gout. His reasons for this conclusion are: the rapid occurrence and dispersion, in many cases of gout, of the local disease; the languid circulation of the gouty; the rare occurrence of gout at that period of life when men are most prone to inflammation, as well as in individuals of a robust constitution.

> "The heavy and corpulent; those who have loaded viscera and languid circulation; persons of inactive temperament and lazy habits; those in whom other diseases assume indolent and cachectic forms, are its choicest victims. It shuns the stout and healthy labourer; it seizes the fat and dull farmer. It seldom visits the active and athletic sportsman; it revels in the blood and joints of the exhausted debauchee. Its whole history marks it as a complaint of an asthenic character."

> "Were gout essentially inflammatory, it might be presumed that inflammation would be its primordial local symptom, and in this case we should surely expect that it would sometimes run the ordinary course of phlegmonous disease. Not only is this not the case, but there seems something in the nature of the disease which prevents the inflammation that supervenes in gout ever running into the suppurative process. I never saw but one instance of phlegmon in gout, and I never saw a more ill-conditioned and offensive discharge."
>
> "The terminations of gout, and its vicarious and cognate diseases, also mark its nature. They are, suppression of the natural evacuations, spasm, cramp, dyspepsia, melancholy, apoplexy, and dropsy."

In Chapter VII., Dr. G. presents his own views of the true nature of gout. Venous congestion, he considers to be the first condition essential to the formation of the gouty diathesis. The capillary and nutrient vessels, distributed on the extreme and sentient fibrillæ of the nerves, being in the same distended condition as the larger venous trunks, and being bound down by the firm fasciæ in which the gout has its usual seat, cause, by their pressure upon the nerves, the painful phenomena which attend the disease. The contents of the over-distended vessels being compressed between the power derived from the heart and arterial system, urging it forward on its course, and the antagonistic resistance of the great veins leading to the right auricle, cause, occasionally, the capillaries to give way, causing a true hemorrhage in the part affected. If the rupture take place in a minute capillary, carrying the serous portion of the blood only, œdema is the consequence, but if the burst vessel be one carrying red blood, a true ecchymosis is formed.

> "This view of a fit of gout," Dr. G. remarks, "may startle, from its novelty; but I am thoroughly convinced, from long observation of the disease, that I have given the true rationale. All its symptoms may be readily arranged under this explanation. Any other, that I have ever heard of, leads us into such difficulties as to leave us only in greater doubt than before."

In the eighth chapter, the exciting causes of gout are considered. After showing that it is the disease of the sedentary, the supine, the luxurious liver, and too frequently of the student, and over-taxed man of business—that all its producing causes are such as increase the mass of the circulating fluids, while they impede the full arterialization of the blood, and cause its accumulation in the venous system, Dr. G. condenses the whole argument, under this head, in the following remarks:—

> "Chronic diseases may, in one sense of the word, be considered as mere modes of decay of the system. This is true, whether they be the result of original construction, the offspring of our own follies, or the effect of time; but there is no chronic disease which, in my mind, so remarkably exemplifies the progress of decay as gout. When we consider its hereditary descent, we can hardly withhold our belief that, though its great symptoms are exhibited at the decline of life, yet it must lie concealed in the constitution of the young. Physicians who observe carefully the ailments of infants and growing youths, cannot fail to be struck with the frequent indications they give of arthritic disease. From these faint beginnings, to the final destruction of health and life, the course of the disease is gradual, sometimes almost imperceptible, but steady and certain, if its great causes be uniformly maintained. Indeed, I do not know a better measure of decay of the system than is afforded by gout.
>
> "The real pathology of gout appears, then, to me to be comprised under these heads: an increased pressure of the blood from its accumulation in the great veins, and an altered state of that fluid leading to the formation of uric acid instead of urea; these results being dependent on too copious an assimilation of nutriment, on defective respiration, and on more or less suppression of the healthy evacuations from the liver, the kidneys, and the skin. The plethoric state, thus engendered, causes, in strong constitutions, painful manifestations of

the regular disease; in feebler habits, its irregular and atonic forms. But this plethoric condition has its cause, which I have as plainly pointed out as my desire not to assume, in a medical treatise, the censorial privilege of a moralist, would permit. We must still pause for a reply to the dark and intricate question, why some constitutions, when thus affected, generate gout, while others show no tendency whatever to the disease. The progress of science will prove whether that unknown something in the system, which we express by the term hereditary and constitutional tendency, can be laid bare to the senses, or whether it must be for ever veiled from our eyes; but at present it is undoubtedly one of those mysteries of science requiring implicit belief, on which our keenest study has not yet shed one ray of light.

"It is, notwithstanding, very certain that the blood of those persons who fare too sumptuously, and lead indolent lives, is in a less healthy condition than that of those whose indulgence is moderate, and whose occupations are active and salutary. So far, indeed, am I a humoralist, as to believe that chemical researches will lay before us more morbid changes in the fluids than the recent discoveries that the urea and urates in the blood increase, diminish, and alternate with each other, according to the varying condition of the system. These changes will, no doubt, prove explanatory of phenomena which yet perplex us, and they may also become concurrent causes with plethora of the fluids, and the rupture of vessels, in explaining the paroxysm of gout; but, even then, I should not depart from the opinion I have expressed, that they are all of them only signs of that state of the system indispensable for the production of the local phenomena which distinctly characterize the disease. It is unquestionable that, though revealing itself by the outward manifestations I have described, gout is due to a particular tendency of the constitution, of which no explanation can yet be given, and that under suitable circumstances it may never disclose itself."

In Chapter IX., after considering the question of the curability of gout, and arriving at the general conclusion, that, in its earlier stages, the disease is perfectly curable, though not through what is vulgarly called physic, but chiefly from a well-directed course of diet and regimen, Dr. G. enters into an exposition of its true hygienic management. He points out the fact, which he had previously noticed, that the incipient signs of gout may be discovered in infancy; and the importance, therefore, in races where the gout is as certain an inheritance as the patrimonial estate, to commence, from birth, a rational course of hygienic treatment, calculated to extinguish the first germ, and prevent altogether the growth of a malady "which may very justly be regarded in the light of a family curse."

The remarks of our author on the errors committed by parents, in reference to the nourishment of their infants, and the diet of childhood generally, are particularly excellent; and not less so, are the hints he has thrown out in regard to the necessity of a temperate use of a wholesome, nourishing diet, abstinence from heating drinks, daily active exercise in the open air—particularly the free, pure air of the country—cheerfulness of mind, and the avoidance of every species of sensual excess, from puberty upwards, as a means of preventing the occurrence of gout. We believe with Dr. G. that more constitutions are undermined, and a greater amount of disease and suffering produced, by gross errors in regard to hygienic rules, in infancy, childhood, youth, and after age, than from all the other morbific causes to which the human being is liable to be exposed. It is true, many of these errors owe their origin to the ignorance or indifference of parents and nurses, and to the cravings of appetite, mere indolence, or the neglect of sound moral considerations, during the period of youth and maturity; but we fear that some of them are to be attributed to false views, promulgated by physicians who have neglected to study the true principles of hygiene as founded upon the physiological laws of the animal organism.

In Chapter X., the proper medical treatment of gout is pointed out. Dr. G., while he condemns copious blood-letting, believes that the lancet may be employed in such a measure, and with such precaution, as to do good by relieving the over-loaded heart and vessels, which the symptoms of the disease point out as required. Small bleedings (from three to six ounces), he believes, instead of being debilitating, may be ranked with tonics, on account of the cheerfulness, energy, and sense of power, they suddenly restore to patients oppressed by a state of plethora. They most beneficially, too, supplant, he conceives, the use of purgatives, which he asserts to be very often noxious in gout, and attended with considerable risk, when used after the manner recommended by Sutton, for the relief of the fever which attends the disease.

When the abstraction of blood is limited to the small amount required merely to relieve the oppression of the system, according to Dr. G.,

> "The secretions of the kidneys and liver, which were arrested by the too great pressure on these organs, are established; the fulness of the head, which prevented the due discharge of the functions of the brain, is also relieved, and the uncloudy nervous influence is transmitted to the most distant parts of the system, with an undiminished power. The consequence of this, is not a return to a state of hyperæmia, but a condition of things in which, with a well-regulated diet, the patient may, if he will, contend successfully with a gouty diathesis."

Dr. G. never makes use of bleeding, in cases occurring in an impaired or defective constitution; he believes that some considerable degree of vigour is necessary to its legitimate use, which is generally the case in the early stages of regular gout. He prefers the blood to be taken from the arm, but in cases where there is much suffering in the head, there is an advantage, he admits, in drawing it by cupping, from the nape of the neck.

Active purging our author condemns, but considers laxatives to be essential. "Even," he remarks, "when patients lead a most abstemious life, it is necessary that the bowels should be relieved occasionally, by medicine." The warm, and even the more powerful vegetable aperients, such as senna, rhubarb, aloes, jalap, and scammony, seem to him far better adapted to the constitution of the gouty than the neutral salts. They may be given with great advantage in the form of tincture, and associated with the warm aromatics, and tonic bitters.

Although Dr. G. objects to the use of neutral salts as purgatives, he has found much advantage from their employment, in small doses, as diuretics, particularly such salts as are formed by the vegetable and phosphoric acids. The latter have seemed to him singularly useful. They aid much, when given in half-drachm doses, frequently repeated, in mitigating the pain, and assuaging the general irritation, which accompanies the paroxysm.

Dr. G. remarks, in reference to the alkalies and earthy carbonates, that, as remedies in gout, they cannot be esteemed of the smallest account, and that they will much disappoint those even who look to them for any signal relief of symptoms.

Tonics, when used at the subsidence of the fit, and accompanied by exercise and suitable diet, he is convinced have not been too much extolled, hardly even duly appreciated. In all those forms of lingering and atonic gout, which affect the distant parts of the body with irregular and flying pains, the stronger tonics, he remarks, will be found useful and potent assistants to the warmer vegetable purgatives. Quinine, in doses of two grains, twice or even three times a day, accompanied by a mild laxative at night, will very often succeed in restoring comfort.

"In the last painful stage of gout, iron will often be found a most important resource, unless there be signs of a strong tendency of blood to the head; this, however, is seldom the case at the close of an attack of gout. There is a form of the disease chiefly seen in old people, which is manifested by swollen articulations of the hands, with slight derangement of stomach, faltering in the action of the heart, and intermissions of the pulse, for which iron seems to me the best, if not the only remedy. The forms in which I have chiefly used it, are the saccharine carbonate of the Edinburgh Pharmacopœia, a most useful preparation, the citrate and the tartrate."

In regard to the cold water cure, Dr. G. believes that where it is efficacious it is dangerous. In the latter stages of the disease, he does not doubt that it is fraught with the utmost risk; and believes that the facts in this instance, could an honest statement of them be arrived at, would fully confirm this opinion.

Dr. G. has no doubt that colchicum is one of those drugs, whose claim to be considered specific is well established. The *modus operandi* of the remedy is not wholly involved in mystery. It has been demonstrated, that it causes a more copious discharge of urea from the system. He has found, in repeated investigations, that the increase of urea was attended by a great diminution of the urates in the urine, confirming the opinion that urea and uric acid are correlative and vicarious substances. He believes that the operation of the colchicum is through the nervous system.

The cases to which colchicum is most applicable are, according to Dr. G., without doubt, those of the regular disease, without injury of organs. Cases of atonic gout, he remarks, certainly receive less relief from its use, and some of them are so little influenced by it, as by no means to compensate for the low and depressed feelings it often creates. These effects may, however, be much obviated by combining it with warm aromatic tinctures and water, and with the vegetable laxatives, which do not destroy its specific action, but, on the contrary, much promote it.

Our author believes that the most common reason of the failure of colchicum is the unnecessarily large doses in which it is frequently administered.

"If," observes Dr. G., "the disease be permitted to expend its first violence, colchicum may be most safely and effectually used. When the fever has abated, the œdematous swelling of the part established, and the bowels well relieved, colchicum may be used with good effect and perfect safety. A long experience of the medicine now enables me, with great confidence, to recommend to younger practitioners to abate much the amount of the dose they use. I have seen doses of one drachm of the wine or tincture given twice and three times in the day, with no effect on the disease, but with sad disturbance of the patient's constitution; and I have seen the same case led back gently and quickly to health, with doses varying from ten to fifteen minims, after a little time had elapsed, and the fire of the disease was in some degree extinguished."

In concluding his account of the treatment of regular gout, the author remarks:—

"I recommend a perfect holiday to all men who have gone through a fit of gout. It should be passed in good, bracing air, with as much exercise as their feeble state will enable them to take; in order that the lungs may be well expanded, the assimilation of the food be perfected, and a pure and well-oxygenated blood be worked into the organic textures and moving structures of the body. During this time of seclusion, it is of much importance that a light but nourishing diet should be used, and that the bowels should be gently acted upon, so as to relieve the system of any remaining oppression. These purposes may be well accomplished during a residence at some of the fashionable watering-places."

The treatment of irregular gout forms the subject of the eleventh chapter. The author notices the difficulty of laying down any clearer, certain rules to guide us in these perplexing and too often alarming cases. The free use of opium and powerful stimulants he condemns as often very unnecessary, and then injurious. If time, he remarks, be given, and forbearance practiced, it is wonderful to observe what painful and alarming symptoms will quietly depart, without artificial aid. The immediate seizure is generally, if not always, caused by indigestion, some disturbance of the circulation, or some emotion of the mind; and as these are removed their effects pass away.

> "At present, it is a matter of very nice tact and judgment to distinguish the case in which the most heroic remedies must be instantly applied, to sustain the fleeting powers of life, from that in which the advantage of the patient is best consulted by '*expectation*' and forbearance; but, of one thing I feel certain, that medical practitioners will exhibit those qualities which entitle them to confidence, when they do not suffer themselves to be hurried into decision by the clamour of patients and their friends. In general, it may be said that those cases attended with little change in the pulse, even though there be intense suffering, severe vomiting, and signs of much disturbance in the stomach and diaphragm, best bear delay; and that those in which the action of the heart is very depressed, and where there is little acute pain, are the cases which most imperatively call for prompt and effectual aid."

The patient who is frequently affected with metastasis of gout to the head, Dr. G. believes to be seldom free from structural disease of that organ; either earthy formations disturbing the action of the valves, and injuring the function of the coronary arteries, by which means the nutrition of the heart is impeded; or a fatty degeneration of the muscular substance, leading to dilatation of the cavities. The first of these is incurable; but Dr. G. believes that the latter may be removed by putting an end to the secretion of oil globules within the fibres of the muscular structure of the heart, and by restoring that of fibrin. For this purpose, he proposes a diet, composed of little hydrocarbonaceous matter, and furnishing the albuminous elements to the blood; that is, a more animal diet, with pure air, and well-regulated exercise. Colchicum, he considers not to be adapted to such cases. Purgatives, and even laxatives, he condemns; but the free use of chalybeates and tonics, in powerful doses, continued for many months, he enumerates as among our most useful remedies. The gallic acid has also seemed to him, in several cases, of great benefit.

Metastasis to the head is, according to Dr. G., by far the most usual form of misplaced gout.

> "It occurs with every degree of suffering. The headaches from which those persons suffer in whom the excretions of urates and urea have, from any cause, been suddenly diminished or temporarily arrested, are only a commencement of this affection, which may well be likened to the effect of a poison. I believe that the substance of the brain itself is the part usually affected in these cases; and my reasons are, that they are never attended with delirium or wandering, but always accompanied by stupor and somnolency; and that, when they terminate in apoplexy, the ruptured vessel is found in the cerebral substance."

In cases of metastasis of gout to the head, Dr. G. condemns large bleedings; a little relief given to the system by a small bleeding, will, he remarks, enable the kidneys to resume their office, and the local symptoms will then safely depart. Colchicum, in minute doses, he considers a most useful remedy, by increasing the secretion of urea. Laxatives are always necessary; and even a cautious use of the more drastic purgatives may be required. Iron and tonics of all kinds must either be forbidden, or used with the utmost vigilance and caution. When the stagnation in the brain is plainly owing to the impaired power of the heart, Dr. G. can nevertheless conceive that they may be of service, though he has never made use of them.

Much skill is requisite in the management of the diet; but, even in cases of translation to the brain, he is persuaded that it should be chiefly of animal substances.

Whatever may be the estimate which shall be formed of the views of Dr. Gairdner, in relation to the pathology of gout, the work before us will be read with interest. The opinions advanced are evidently the result of close observation; while the practical directions given for the treatment of the paroxysms of the disease, in its more common or regular form, as well as the plan laid down for the prevention and eradication of the gouty diathesis, will command the attention, as we believe they should the confidence, of such as may be called upon frequently to treat a malady which is emphatically the offspring of luxury and vice, combined with the cares and perplexities, the anxieties and disappointments, incident to a highly artificial state of society.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

Art. XVI.—*A Theoretical and Practical Treatise on Human Parturition.* By H. Miller, M. D. Professor of Obstetrics and the Diseases of Women and Children, in the Medical Department of the University of Louisville. Louisville, 1849: 8vo. pp. 463.

This is a very sensible treatise on the theory and practice of obstetrics. The author has presented, in a plain, but clear and vigorous style, a correct exposition of the mechanism of labour, according to the several positions of the fœtus, and an explanation of the efficient and determinative causes of labour, unquestionably accurate in regard to the first, and plausible, though somewhat hypothetical, in regard to the latter. His history of the phenomena attendant upon the several stages of labour is sufficiently minute and accurate, while his directions for the management of its different forms, are precise, and in the main judicious. On a few points, he will be found, it is true, to differ somewhat from the lessons inculcated by authoritative teachers; still, taken as a whole, we believe that the rules laid down by Dr. Miller, for the conduct of labour, may be safely and beneficially carried out in practice.

In regard to the fœtal presentations and positions, the author follows the classification of Duges, but has adopted a nomenclature of his own. This nomenclature differs somewhat from that in general use, but less so than we were led to suppose by the language of the author, when he refers to it in his preface. We are not convinced, however, that it is in any respect preferable to that employed by other teachers of obstetrics. The importance of a uniformity in the classification and nomenclature of the several forms of labour, and the great advantage of the general adoption of precise and comprehensive terms to indicate the presentations and positions of the different parts of the fœtal body in utero, must be admitted. There is no particular objection to the classification and nomenclature recommended by Dr. Miller, but it can scarcely be hoped that they will be received as a "national," much less a universal "standard."

The portion of the work which appears to us the least satisfactory, is that which treats of labours demanding the instrumental delivery of the child. In the chapter (xii.) on "impotent action of the uterus," the circumstances are explained, under which the expulsion of the fœtus by the unaided powers of the uterus is prevented, but in a too general manner; one better adapted for the use of the experienced obstetrician, than for enabling the student and young practitioner to form a safe judgment as to the propriety, in any given case, of resorting to the use of instruments. This important question is dismissed with the following remarks; the general accuracy of which we admit, but object to them as not sufficiently definite—as inculcating only the truism, that instrumental interference should not be too early resorted to, nor too long delayed; but leaving the reader to form his own estimate, as to what constitutes the just medium between the two extremes.

"Looking," says the author, "at the subject in a general light, I would say that *time* is no criterion to govern us. The march of time is not uniform in its effects on labour, any more than it is on the persons of the sex. In the lapse of a given number of hours, some women will be brought into a perilous condition, while others, under similar circumstances, as far as we can judge, will be in no manner of danger. In forming our opinion as to the necessity of artificial delivery, our attention should be directed to the evidences of uterine impotency; in proportion as these thicken, the necessity of delivery becomes more and more urgent. It is not wise to wait until the urgency is extreme, and in general, the earlier the woman is relieved by delivery, the better, *provided this can be done with facility and safety.* Suppose, for example, the head of the child is presenting, and has ceased to advance, while the uterus has evidently become impotent. Suppose, moreover, the head is within easy reach of the forceps, and can be delivered without risk or additional pain to the mother; what would be the use of waiting until we are driven to the operation? But if delivery be not so easily and safely practicable, prudence requires that it should be deferred until the necessity of it is more pressing. So pressing that, in our opinion, it is better to incur whatever risk the operation may involve than wait longer."

The directions for the application of the forceps are, in general, accurate, and as clear as they can be made without the aid of well-executed wood cuts, which have now become, to a certain extent, essential for the illustration of the text, in all treatises on obstetrics.

The work before us is evidently the production of one well versed in the subject of which it treats; a clear and independent thinker, and one accustomed to communicate in a plain, concise, and vigorous style, his thoughts to others. Though inferior, certainly, to some of the standard treatises in comprehensiveness and fulness of detail, it may nevertheless be studied with profit by those who would learn the theory and practice of obstetrics, and may furnish a useful hint, even to those who are already engaged in the active duties of midwifery.

D. F. C.

Art. XVII.—*A Dissertation on the Practice of Medicine, containing an Account of the Causes, Symptoms, and Treatment of Diseases, and adapted to the Use of Physicians and Families.* By Tomlinson Fort, M. D. Milledgeville, Georgia, 1849: 8vo. pp. 740.

In his preface, the author of the present dissertation informs us, that, had he not been prevented by sickness, he would have written an introductory chapter, to convince the profession " that the time had arrived when a diffusion of medical knowledge among men was necessary to the continuance of their confidence in the science and its professors; that the decline of that confidence, which is manifest in this day of increasing civilization, has arisen from the vain attempts to make medicine an exclusive property in the hands of those who pursue it as a profession." That in this " vain attempt" is to be sought the cause and success of the empiricism, which, under various forms, pervades the land. That it would be greatly to the credit of medical men, and profitable to the whole profession, to throw open the doors of their science, and, by all practicable means, induce mankind to consider it their duty to obtain some knowledge of it for themselves. And, finally, that this knowledge of the healing art is, or may become necessary to every citizen, inasmuch as "no man can be certain that it will be always in his power to obtain medical advice; for every one is subject to a thousand casualties, which will compel him to rely on his own skill; and this necessity, against which there is no defence, will operate with greater power over the thousands of our best citizens, who are scattered abroad in the country."

We certainly have great cause of regret, in being deprived of the proposed introduction; not that we require any arguments to convince us that the confidence of the community in our profession would be secured, and quackery, in all its forms, most effectually destroyed, were every citizen, male and female, well indoctrinated in physiology, pathology, therapeutics, and clinical medicine. We are fully convinced, also, that such an education would prove, often, of very great value to the heads of families, in the sparsely populated portions of our widely extended country. But we must confess ourselves sorely grieved, in being left in ignorance of the means which our author would recommend for effecting this very desirable " diffusion of medical knowledge" among the community at large.

Our profession cannot certainly be accused of any attempts to close "the doors of their science" upon any one. Our medical colleges, scattered throughout the length and breadth of the land, exhibit, it must be confessed, a very liberal spirit in their invitations to every one to enter within their walls and be made doctors. But it cannot be expected that "the entire community" will ever be induced, even could they spare the time and means, to become regular students of medicine; and every other attempt to diffuse among the people that degree of medical knowledge which shall be productive of any beneficial results, will be found altogether impracticable. The science and the art of medicine are too extensive, and too difficult to be acquired, for any profitable end, excepting by such as shall devote the whole of their mental powers, and their entire lives, to their study and pursuit. Medicine can never become a popular science. In no profession is a partial and imperfect knowledge of its principles and practice calculated so effectually to mislead or to produce more serious mischief. The "some knowledge" of medicine, which our author considers it the duty of all to obtain, would most unquestionably prove to its possessors a curse instead of a blessing; and in place of forming a barrier to stem the flood of empiricism now inundating our country, would rather be a means of multiplying its advocates, and strengthening its pretensions. The progress of the healing art, and the best interests of those who may have need of its succour, in the hour of sickness and of suffering, demand that its cultivation and practice should be confided to a distinct body of men—the medical profession.

As one of the means of giving to "the science of medicine a wider range in the mental operations of the age," or, in plain language, of teaching every one to know and cure the ills his flesh is heir to, and thus to become his own doctor, the work before us is offered to the public. But we very much fear that the "Dissertation on the Practice of Medicine," of Dr. Fort, will not be found to be one well adapted for the instruction in medical lore, of either physicians or families—for the use of the professional or unprofessional reader.

Without inculcating any very gross errors in either theory or practice, the work presents, certainly, but a very faint and imperfect sketch of the present state of our knowledge in regard to the pathology and therapeutics of the several maladies of which it treats.

The author's descriptions of disease are, in general, loose, vague, imperfect, and confused. It would puzzle, not a little, any individual, medical or non-medical, to form a certain and accurate diagnosis of a case of measles, scarlatina, varicella, hydrocephalus, croup, pertussis, tuberculous consumption, &c. &c., guided solely by the descriptions of these diseases given in the volume before us.

Even when the author affects great minuteness in his detail of the symptoms and progress of a disease, his minuteness, admitting its correctness, is calculated to mislead the unprofessional reader, at least, whenever the malady shall deviate, in any of its phenomena or in its march, from the description given.

The plans of treatment recommended by Dr. Fort are, for the most part, in their general outlines at least, correct. His directions for the administration of remedies, are, nevertheless, often deficient in clearness and precision. The particular circumstances, as well as the succession in which the employment of the individual remedial agents will be found most beneficial; the indications which counterindicate their use; the modifications in the treatment demanded by the varying features of the same or different cases; the proper period for the suspension of active remedies, or the circumstances which may call for a recurrence to their use, are seldom pointed out with sufficient exactness. Occasionally, also, the author's therapeutic directions are conveyed in terms too vague to give any definite instruction to the unprofessional reader, or even to the practitioner.

It is not necessary that we should enter into a detailed examination of the several chapters of the present work. In such an examination we should not have occasion, certainly, invariably to condemn. The pathological portions of the treatise are, it is true, imperfect throughout, and not calculated to convey correct views of the nature of disease. In his therapeutics, the author often exhibits sound judgment, but the value of his practical precepts to the student, and unprofessional reader, at least, are impaired by the vague manner in which they are too frequently announced.

The work can never become one of authority with the profession, nor do we believe it to be destined to acquire much credit as a popular treatise.

D. F. C.

Art. XVIII.—*Lectures on the Diseases of Infancy and Childhood.* By Charles West, M. D., Fellow of the Royal College of Physicians, Senior Physician to the Royal Infirmary for Children, Physician-Accoucheur to the Middlesex Hospital, and Lecturer on Midwifery at Saint Bartholomew's Hospital. Philadelphia, Lea & Blanchard, 1850: 8vo. pp. 451.

These lectures, the substance of the greater portion of which was addressed to the pupils of the Middlesex Hospital, in the summer of 1847, comprise a very able summary of the pathology and treatment of the leading diseases incident to the periods of infancy and childhood. While the author has availed himself of the labors of those who have cultivated the most successfully this particular department of medical inquiry, the value of his lectures is greatly enhanced by the comparison of the opinions and practice advocated by the more authoritative writers on the diseases of which he treats, with the result of his own observations. These observations were made in the large field presented by the Children's Infirmary of London, which was first thrown open to the author in the year 1839, by the kindness of his friend, Dr. Willis, then physician to that institution; to which office, on his resignation, in 1842, Dr. West succeeded. Very nearly 14,000 children, affected with various diseases, were thus brought under his notice, during the nine years preceding the publication of these lectures in their present form; of the diseases of 600 of these patients, he has kept accurate notes, as well as of the result of 180 dissections of cases in which those diseases terminated fatally.

Every portion of these lectures is marked by a general accuracy of description, and by the soundness of the views set forth in relation to the pathology and therapeutics of the several maladies treated of. The lectures on the diseases of the respiratory apparatus, about one-third of the whole number are particularly excellent, forming one of the fullest and most able accounts of these affections, as they present themselves during infancy and childhood, in the English language. The history of the several forms of phthisis during these periods of existence, with their management, will be read by all with deep interest. The author's account of the diseases of the digestive organs is excellent so far as it goes; but it appears to us that too little space—one-sixth of the course—has been accorded to the pathology and treatment of these very frequent, and certainly very important affections of the earlier periods of existence. The American physician will be disappointed in not meeting with any notice of some of those forms of disease of the alimentary canal, which he will be frequently called upon to treat in children. Notwithstanding the lectures are addressed to the medical student and practitioner of Great Britain, they will, nevertheless, form a useful addition to the library of the American student and physician.

D. F. C.

Art. XIX.—*Clinical Lectures on the Physical Diagnosis of Phthisis.* By Richard Payne Cotton, M. D. London, 1849: pp. 23.

These lectures are republished from the *London Medical Gazette.* They are six in number, and were delivered at the Hospital for Consumption and Diseases of the Chest, by Dr. Cotton, assistant physician to the institution. Without claiming to announce new discoveries, or to propound new laws, in the department of physical diagnosis, they are presented as the result of the lecturer's personal observation and reflection, and they furnish satisfactory evidence that he is not less accurate as a reasoner, than skilful as an observer. He deserves the credit of having placed a familiar subject in a clearer and broader light than others who have handled it. In method, distinctness, and completeness of analysis, he may rank with his countryman, Walshe; and like him, he seems to have developed these qualities in the best of schools for such cultivation, the school of Paris.

The experienced diagnostician will not, it is true, find much to aid him in these lectures. His difficulties are greatest in cases of phthisis complicated with some other pulmonary disease, in which he is required to form and express an opinion after a single, or it may be two examinations, of the patient. A lecturer cannot unravel such difficulties except by an analysis of individual examples of the sort; he cannot lay down rules which will apply to all of them, because the variety and degree of the complications actually met with are almost infinite. But the simple, or differential, diagnosis of tubercular consumption, that which the student must first of all acquire, may be taught almost axiomatically, and he is the best teacher who presents it in the plainest language, the most concisely, and in such a manner as that a proper succession is observed in the steps to be followed, and an adequate reason perceived for the opinion to which every one of them leads. In these respects, the lectures of Dr Cotton offer an excellent model, and point him out as likely to become a worthy compeer of those gifted men, who are introducing into English medicine a degree of system and accuracy, the want of which in times past has so greatly detracted from its influence and its value. A. S

Art. XX. *Epidemic Cholera—Its History, Causes, Pathology, and Treatment.* By C. B. Coventry, M. D. Professor of Obstetrics and Medical Jurisprudence in the Medical Institution of Geneva College; Professor of Physiology and Medical Jurisprudence in the University of Buffalo. Buffalo, 1849: 12mo. pp. 119.

A Practical Treatise on Asiatic Cholera, which every person should read, as it may be the means of saving the lives of thousands. For the benefit of the public it is issued in Pamphlet form; taken from a new Medical work, now being published on Diseases of the South. By Thompson McGown, M. D. Graduate of Transylvania University; Member of the Lexington Medical Society, and a Practitioner of the South. Philadelphia, 1849: 8vo. pp. 30.

Letters upon Cholera. By Frank A. Ramsey, M. D. Knoxville, Tennessee, 1849: 8vo. pp. 30.

Cholera—Its Causes, Symptoms, and Treatment considered and explained. By I. P. Batchelder, M. D., of New York City. New York, 1849: 12mo. pp. 45.

Lecture on Epidemic Cholera, delivered in the Hall of the Philadelphia College of Medicine, in May 1849, *at the request of the Medical Class.* By Thomas D. Mitchell, M. D. Professor of the Theory and Practice of Medicine in the Philadelphia College of Medicine, and late Professor in the Medical Department of Transylvania University, Lexington, Kentucky. Philadelphia, 1849: 8vo. pp. 22.

The Pathology and Treatment of Asiatic Cholera, so called. By A. L. Cox, M.D. New York, 1849: 12mo. pp. 54.

The Pathology and Treatment of Cholera: with an Appendix, containing his latest Instructions to Planters and Heads of Families, remote from medical advice, in regard to its Prevention and Cure. By Samuel A. Cartwright, M. D. New Orleans, 1849: 8vo. pp. 40.

The above are the titles of a few of the host of publications, to which the recent prevalence of cholera in the United States has given birth. The character and object of these works differ considerably. Those of Drs. McGown, Ramsey, and the appendix to that of Dr. Cartwright, are confessedly written for the instruction of the public, or those remote from medical advice; that of Dr. Mitchell is a lecture delivered to a class of medical students, presenting an outline of the pathology and therapeutics of cholera; the main object of that of Dr. Cartwright would appear to be, to enforce the efficacy of his celebrated compound of capsicum, calomel, and camphor, as the remedy in all cases of disease attended with thin, large evacuations from the bowels, of a light colour or destitute of bile, whether cholera, congestive fever, or any other complaint; while those of Drs. Coventry, Batchelder, and Cox, are presented as concise treatises upon the disease, explanatory of its history, causes, nature, and treatment, for the use of the medical student and practitioner. The views set forth in most of them, profess to be the result of extensive observation and experience; and yet, from the whole, it can scarcely be said that we derive one single ray of light to direct us in our investigation of the pathology of a disease which has prevailed over a wider extent of the earth's surface, and has produced, in its several epidemic visitations, a greater amount of mortality than almost any other with which we are acquainted; nor do they present even a full exposition of all the facts which recent observers have recorded, in reference to its morbid anatomy, or the changes observed in the blood and other fluids, as well during life as after death, of those attacked by it.

In the exposition of the predisposing and exciting causes given by the several writers, there is a surprising unanimity. Upon this point, indeed, no important difference of opinion exists among the profession generally; and hence, the leading measures for the prevention of cholera, in communities and individuals, laid down in any one of the publications, is but a repetition, with more or less detail, of that recommended in the others.

In regard, however, to the immediate, or, as it has been termed, the proximate cause, scarcely two of the writers agree.

By Dr. Coventry, the first step in the production of the disease, is a derangement in the functions of the nervous system; a prostration of its energies, preventing those changes in the condition of the blood, and nutritive processes, by which the blood is purified and caloric evolved.

"Carbonic acid is not formed by the union of the carbon with oxygen; heat is not generated; the blood, still charged with carbon, paralyzes the action of the heart, which, in its turn, becomes enfeebled; congestion of the internal organs follows, as in actual asphyxia; the nervous system being also paralyzed, the congested organs are incapable of retaining their contents, and the watery portion of the blood escaping, by transudation, into the intestinal canal, is ejected by vomiting and purging; hence, the discharge; hence, the discolorization from retention of the carbon; hence, the extreme cold, in consequence of heat not being generated, and of the rapid evaporation from the surface. Hence, also, the dark colour, and thickened consistency of the circulating fluid; and hence, too, the reason why injection of saline fluids into the veins, seldom succeeds in restoring the patient, though it may revive him for a time, for it cannot remove the congestion of the capillary system."

According to Dr. Ramsey, cholera consists in a morbid change produced in the blood by the choleraic poison; or, in his own words:—

"The causative agent, whatever it may be, enters the economy; probably by inhalation, or through the lungs; and by impression on the blood causes an alteration of the relations of its constituent parts, and the effect is unhealthy manifestations, proportioned to the degree of such alterations."

The diminished temperature, weakened action of the heart, the vomiting and purging, and the torpidity of the glands, are secondary effects, dependent upon the change in the blood.

"The tendency of certain elements of the blood, and the coincident destruction of the natural relations of the blood constituents, are the only immediate or direct, and therefore, primary effects. These being coincident, may legitimately be considered identical; and the one being obvious, while the other is hidden, the primary effect may be stated to be *a tendency of certain of the blood constituents to escape from the free surfaces offered them by the stomach, bowels, and lungs.*"

Dr. Batchelder teaches, that

"The specific cause or choleraic agent, produces a vehement contraction of the capillaries throughout the whole body, especially those portions of it which belong to animal life. With this constriction of the minute vessels, it also causes a *relaxation of the pores*, particularly those opening into the stomach and bowels, through which the colourless, serous, and saline constituents of the blood escape into these viscera, and leave the system destitute of materials essential to the performance of vital functions."

In applying this view of the special cause of cholera to the explanation of the symptoms, Dr. B. has presented, certainly—provided we admit the accuracy of all his physiological and pathological data; the validity of one or more of which we should, however, be inclined to dispute—a very excellent and consistent rationale of the various phenomena peculiar to the disease. In reference to these phenomena, he has, unfortunately, made one or two very serious mistakes.

"When the surface of the body," he remarks, "exhibits the dark blue appearance mentioned by writers, and *universally witnessed by all who have seen much of cholera*, the mesenteric veins are seldom much gorged with blood, and *vice versa*, they are generally distended with that fluid, when that appearance is absent. This dark-coloured appearance, although mentioned by writers as a symptom of cholera, is by no means uniform, or, according to the writer's observations, even general; but rather the exception than the rule, and occurs only when the visceral veins are undistended. When absent, the internal veins are gorged; when present, comparatively empty."

We pass over the palpable contradiction between the first and second sentences of the above quotation, as it may have originated in a typographical error; but we must reverse the declaration of the author, that the dark blue appearance of the skin, in confirmed cases of cholera, is the exception rather than the rule. In the second and advanced stages of the disease, we have never known it to be absent—varying, however, in extent and intensity, in different cases; it is almost pathognomonic of the disease; its very rare absence is to be set down as the exception, its presence as the rule. Again, Dr. B. refers to "the shrinking of the cutaneous capillaries which belong to animal life," as "the physical cause" of one of "the prominent symptoms" of cholera, "the *sensation of cold*." Now we have seen much of cholera, but never have witnessed this sensation of cold; on the contrary, in a vast number of cases, we have heard the patients, whose skin, and tongue, and breath were icy cold, complain of a sensation of heat; their constant desire was for cool air, and cold water, and they experienced the greatest comfort from the application of cold water or ice to their surface.

Dr. Mitchell, with commendable honesty, acknowledges his ignorance of the true pathology of the disease.

Dr. Cox advances no theory explanatory of the proximate cause of cholera. The following quotation will explain his views in relation to its pathology.

"The original symptom is nothing more than a discharge of fluid, in immense quantities, from the bowels. In fact, it is a copious hemorrhage of the fluid parts of the circulating mass. That this discharge is derived from the blood-vessels of the intestines is indisputable, when we reflect that the bodies of those who have died with cholera, and have had no partial relief from treatment and drinks, present the extraordinary peculiarity of being without fluid; nothing remains in the small vessels but the thick parts of the blood. Frequently, mere clots or coagula in the larger vessels, and dark, grumous blood, in the small ones.

"This circumstance, which furnishes the true explanation of the disease, accounts for every symptom in the most satisfactory manner."

If Dr. Cox will only demonstrate the cause of this separation and escape of the fluid portion of the blood, he will have achieved the discovery of the proximate cause of cholera; for we believe, with him, that upon this separation and escape of the watery portion of the blood, depend nearly all the leading phenomena of the disease.

Dr. Cartwright's pathology of cholera differs somewhat from the foregoing, as do also his views of the cause of the circulation of the blood through the pulmonary veins, from those ordinarily received.

"The elimination of vital heat is evidently owing to the morbid cause of cholera, whatever it may be, enervating the brain and nerves, as poison does; diminishing the combustion in the lungs, causing a deficient arterialization of the blood, and a diminution of animal heat as a consequence. *It is the caloric given out by the combustion in the lungs, which impels the blood through the pulmonary veins, to the left side of the heart.*"—"When the heat diminishes, as in cholera, the motive power of the *red* blood through the pulmonary veins is diminished also; at length, the pulse ceases to be felt at the wrist, because the blood from the lungs has lost the motive power that impels it into the right side of the heart, and consequently accumulates in the pulmonary arteries, stagnates in the right side of the heart, and causes a congestion in the venous system. The absorbent vessels, and all the hollow organs fall into a spasmodic or irregular action, as a natural effect of the loss of nervous power, the carbonaceous state of the blood, the deficiency of animal heat, and the stimulus of distension, caused by the venous plethora. The venous congestion is so great, that the exhalant arteries cannot pour their contents into the distended venous system, and all the albuminous and watery parts escape, in the shape of rice water, by a kind of filtering, which the loss of tone greatly favours."

The learned author of "A New Medical Treatise on Diseases of the South," thus treats of the pathology of cholera:—

"Be the cause of cholera whatever it may, apparently, the chief primary morbid impression is made on the nervous system, and mainly on the organic and spinal system of nerves, as is evinced by the looseness of the bowels, nausea or vomiting, muscular debility, cramps in the legs or abdomen, &c., the brain usually being but slightly affected. For aught we know, the cholera poison may obtain ingress into the circulation, chiefly by being inhaled into the lungs, and gradually produce a morbid change in the blood, before the nervous symptoms are very manifest. But as the brain is only slightly affected, it appears that we should look much to the organic and spinal systems of nerves, these being so intimately connected, it might be difficult to determine which is the more affected."

While the views entertained by the authors of the several publications before us, in regard to the pathology of cholera, are thus vague, obscure, and discordant, on one point they are in perfect accordance, and on it their opinions are expressed with clearness and precision. And that is, as to the disease, in the great majority of cases, being preceded or ushered in by a diarrhœa; the discharges, at first feculent, assuming more or less quickly, the characteristic rice-water appearance; and that the suppression of this diarrhœa, which is readily effected by opiates and astringents, with a careful attention to diet and regimen, will prevent the accession of the more serious and intractable stage of the disease. It is true, that while some consider this diarrhœa as merely premonitory of an early attack of cholera, others consider it as the disease itself, in its earliest or primary stage. But this is of little importance, if attention be directed to the necessity of immediately arresting it in order to prevent an attack of confirmed cholera. We acknowledge the correctness of the remark made by Dr. Coventry, namely, that

"All persons acquainted with cholera admit, that few diseases are more manageable, or yield more readily to treatment, in its first stage (that of simple diarrhœa). In the second stage, or after vomiting and purging, with or without cramps, have commenced, the result is very doubtful, and in the third, or what is usually termed the stage of collapse, the case is all but hopeless."

It is true that, in private practice, we have lost no case to which we have been called during the second stage, and in hospital practice, but a very small per centage of such cases; there is, nevertheless, much less certainty of a favorable termination of the disease when it has attained its second stage, than when our remedies are directed against the diarrhœa by which the second stage, as described by Dr. Coventry, is so generally preceded. Hence, it cannot be considered a small matter, to insist so much upon the recognition of this primary diarrhœal stage of cholera. We have known physicians who would recognize no case as one of cholera, which did not present the symptoms of approaching collapse, and who, by neglecting the earliest manifestations of the disease, or by treating them with improper or inefficient remedies, failed to prevent the occurrence of an attack of a more formidable and unmanageable character, and, consequently, finding cholera, in their own hands, to be a most fatal disease, were led to doubt the success of those who, by arresting the disease in its commencement, were enabled to save nine out of every ten of their patients. We concur in the opinion expressed by Dr. Coventry, that to disarm the pestilence of its malignancy, "the first, and most important step is to impress upon the community the necessity of applying for advice during what have usually been termed the premonitory symptoms." And we have little doubt that were patients, who, during the prevalence of epidemic cholera, become attacked with diarrhœa, "impressed with the belief that they then had the disease, they would more readily submit to the necessary confinement and treatment, than if merely told that they had only the premonitory symptoms," which might, or might not, eventuate in an attack of cholera.

From the publications before us, no very important information can be derived in relation to the best treatment of a confirmed case of cholera, in any of its stages. No statistics are given sufficient to enable us to judge of the several plans recommended, nor any statement of the per centage of deaths, which took place among the patients submitted to one or the other, and we know too little of the opportunities enjoyed by the advocates of these plans, and the care with which their observations in relation to their effects have been made, to form any positive conclusion.

Of the propriety of blood-letting the authors of the several works are by no means in accord.

Dr. Coventry advises, if the patient is strong and plethoric, the pulse still full and distinct, the cramp severe, or if there is great oppression in breathing, the feet and legs to be immersed in water, as warm as can be borne, with the addition of mustard and common salt, and from five to sixteen or twenty ounces of blood to be taken from a vein in the arm, the effect produced on the pulse and system generally being carefully watched. He condemns blood-letting when the patient is feeble and delicate, or if the discharges have been profuse, or the fluids of the body have been drained off by long continuance of diarrhœa in the first stage of the disease.

Dr. Batchelder is in favour of bleeding, as a means of overcoming the violent contraction of the capillaries, upon which he supposes cholera to depend, and thus permitting a free circulation of the fluids through them to take place. In the few cases in which it was tried by him, during the epidemic of 1832, the result was favourable.

Dr. Cartwright believes that, "if the vital power be not too much impaired, blood-letting is indicated, to remove the plethora of the venous system, and to accelerate its motion through the lungs. The asthmatic, anxious breathing in cholera, he remarks, as in measles, is often relieved by the lancet, which, by taking off a part of the excess, enables the balance to circulate more readily, by diminishing the plethora in the system of vessels circulating black blood, and thereby removes the difficulty of promoting a healthy perspiration."

Dr. Mitchell has known the lancet to be used in many cases, but never without injury; indeed, the expedient appeared to him to hasten the fatal termination in almost every case.

Dr. Cox remarks that "it will be manifest that venesection and purgatives are both highly injurious under common circumstances."

By Dr. Ramsey and McGown the remedy is not mentioned at all.

There can be little doubt that, under the circumstances noticed by Dr. Coventry, bleeding is a very important remedy in cholera. In the epidemic of 1832, we bled in the early period of the attack, in a large number of cases, and always were satisfied with the effects produced by it. Even in cases in which the abstraction of blood from the arm was not deemed advisable, cups to the stomach, and occasionally along the spine, we found to relieve gastric pain and distress, and often to relieve the vomiting, which in some cases is constant and distressing. During the late epidemic, also, we found the detraction of blood, by the lancet or by cups, in many cases, to be productive of the best effects. It did not appear to us, however, to be so generally indicated as in the epidemic of 1832.

Calomel as a remedy in cholera is noticed in a favourable manner by nearly all the writers. Dr. Coventry gives it in combination with opium and camphor, throughout every stage of the disease. His dose is a grain every two hours in the first, and every half hour in the second and third stages.

With Dr. Ramsey, calomel is an essential remedy in the second stage of the disease, as an equalizer of the circulation. "The quantity of calomel which is proper," he remarks, "is a matter for the discretion of the attending physician. Generally, during the second stage, a dose relatively large, according to the severity of the purging, vomiting, and cramp, repeated as circumstances may direct, will be found sufficient to the subjugation of these symptoms. If, however, two or three doses fail, the administration of the drug in smaller doses should be commenced."

Calomel to the extent of twenty grains constitutes one of the ingredients in the sweating powders, which Dr. Cartwright recommends as almost a specific in cholera. To trust to calomel alone would, he considers, be unsafe, because in the violent cases, if it acts at all, it cannot act in time; combined with opium, it promises more; but it acts, he thinks, most effectually when given in the manner directed by him.

Dr. Mitchell recommends calomel and opium, ten grains of the former to one of the latter, in the first stage of the disease, and if in the succeeding stages symptoms clearly indicate derangement of the liver and digestive organs, he remarks that he would give calomel freely and often.

According to Dr. Cox, "a small dose of calomel may sometimes be necessary at the conclusion of the treatment, especially when there is a manifest deficiency of the biliary secretion, but never to arrest the disease."

Dr. Batchelder condemns entirely the use of calomel in cholera, while Dr. McGown confines its use to the febrile state, which occasionally ensues after reaction has been brought about.

We have administered the calomel, in large and small doses, in a great number of instances, during the first and second stages of cholera, but always in combination with other remedies; we cannot say, however, that we have found the efficacy of the latter in any degree enhanced by it.

The quinine forms, with Dr. McGown, a prominent remedy in every stage of cholera. He commences with from twelve to fifteen, twenty, or thirty, grains at the very onset of the disease, and repeats it in doses of from eight to ten every three to five hours. Dr. Mitchell thinks it may be worthy of consideration by physicians, residing in miasmatic districts, while Dr. Cartwright considers it a remedy liable to great objection. "It has," he remarks, "been given in New Orleans in doses as high as thirty grains, with two grains of opium." "The success," he adds, "of the quinine practice has not made it popular with the faculty or the public." By the other gentlemen no mention is made of quinine as a remedy in cholera.

By each of the writers before us, with one single exception, Dr. Cartwright, opium is spoken of as a leading and important remedy in the disease. It is given variously combined; by one with camphor and calomel; by another with rhubarb; with sugar of lead by another; and by others with kino, catechu, krameria, &c.

Our own experience has convinced us that our main reliance for the arrest of cholera is to be placed upon opium and astringents. The combination we have usually employed is that of opium, camphor, and acetate of lead; a third of a grain of the first, two-thirds of a grain of the second, and one grain of the latter, to be given every half hour, or every two or three hours, according to the circumstances of each case, the extent and frequency of the serous discharges, and the effects produced by the first doses. We can speak most positively of the efficacy of this treatment when combined with venesection or the application of cups, in the cases in which the employment of the latter is indicated, with sinapisms to the arms and extremities, followed by repeated frictions, by means of flannels dusted with powdered mustard or cayenne pepper, to the surface, and the use of small draughts of iced water, or, what is better, small portions of ice, to appease the intolerable thirst, which marks the second and succeeding stages of the disease. We have occasionally, in broken-down subjects, added a grain or two of capsicum to each dose of the opium, camphor, and acetate of lead, and, we are convinced, with advantage.

By one or more of the writers before us, warm or even hot applications to the surface are recommended. These applications we have invariably found to do harm; they are disagreeable to the patient, and certainly have no effect in arresting the occurrence of collapse, or in producing reaction when this has occurred. Cool air and cold applications to the surface produce always a comfortable sensation, and are more calculated to do good in the advanced stages of the disease than heat applied in either a dry or moist form.

That we may do full justice to Dr. Cartwright, we give his treatment of cholera, in his own words:—

"My general plan of treatment in cholera may be summed up in a few words. It is the sweating plan, which past experience has found to be so successful in most of the malignant and congestive epidemics of former ages. The powder I recommend (capsicum and calomel, āā twenty grs., camphor ten grs., gum Arabic and calcined charcoal, āā grs. fifteen), will generally start a sweat in ten minutes, if timely given; and in ten minutes actually begins the cure of the disease, by making a revulsion to the surface. That revulsion to the surface has only to be supported by diluent drinks. No stimulants, astringents, or opiates are necessary, if a healthy sweat can be brought about. They do harm if they interrupt the sweat, by heating the system too much. But until perspiration takes place, stimulants are all important. Bleeding, cupping, or the application of cold water, is as necessary, in some cases, to bring the system down to the sweating point, as hot applications, mustard plasters, and frictions, are in the cold and torpid cases."

The treatment which approaches the nearest to the one which in our hands has proved the most effectual in arresting the disease, put in practice during the first and second stages of the disease, is that laid down in the essay of Dr. Batchelder. The treatment recommended by Dr. Coventry is likewise a very judicious one, and if early enough resorted to, will, we believe, seldom disappoint the practitioner in its results. D. F. C.

XXI.—*The Treatment of Rheumatic Diseases by Lemon Juice; with Illustrative Cases from Hospital Practice.* By G. Owen Rees, M. D., F. R. S., &c. &c. London, Longman & Co., 1849: pp. 38, 8vo.

The object of this publication is to call the attention of the profession to the beneficial effects produced by the exhibition of lemon juice in rheumatic diseases. Dr. Rees believes that this article is no less, if not more, efficacious than any of the preparations of colchicum, which have for so many years enlisted the confidence of the profession, in acute rheumatic affections, and in this he is sustained by the testimony of several distinguished practitioners, who have employed it at his suggestion. Lemon juice, Dr. Rees says, certainly lowers the pulses of those suffering from acute rheumatism in as marked a degree, and as quickly, as colchicum does, when exhibited in medicinal doses, while the early relief from pain is such as we seldom obtain by the use of the latter remedy. Several cases of rheumatism treated, in Guy's hospital, by lemon juice, he states, recovered with a rapidity almost unprecedented, considering the severity of the symptoms. Other cases, he adds, as might have been expected, though they have gone on satisfactorily to cure, have not shown themselves quite so quickly amenable to the plan of treatment. In such cases, the lemon juice treatment has been adopted with such modifications as the case may have been thought to require. The progress, however, of the disease, as observed even when most obstinate, under the use of this new remedy, will, Mr. R. thinks, be found to bear a very favourable comparison with the history of those cases in which the old plans of treatment have been had recourse to.

The form of rheumatic disease in which the greatest benefit would appear to have been derived from the use of lemon juice, is that of acute rheumatism, and that form of rheumatic affection involving the smaller as well as the larger joints in acute inflammation, and known as rheumatic gout.

In cases of pure gout, in which the inflammation is high, great advantage has been observed, while in subacute and more chronic forms of the disease the same marked benefit has not been experienced. Neither is it observed, in acute rheumatism, that benefit accrues from continuing this remedy when the inflammatory symptoms have been checked, and debility remains.

In chronic rheumatism, Dr. R. has apparently observed some benefit from the remedy; but lengthened experience alone can determine the question of efficacy in so lingering and capricious a disease.

Dr. Rees gives the details of eight cases of rheumatism treated by this article, which exhibit its effects in a very favourable light, and are certainly calculated to induce a trial of the remedy.

The determination of the quantity of solid matters excreted by the urine during the twenty-four hours is a point of considerable pathological interest, and Dr. R. has been fortunate enough to obtain in two of the cases very exact returns in this respect. By making a calculation founded on the quantity of urine passed during the day, and its specific gravity, he found that in one of these cases the quantity of solid matter discharged increased as the patient improved. In another, however, in which the state of the urine was very carefully noted, this condition did not pertain; but, on the contrary, the solids so excreted diminished in quantity while the patient was becoming rapidly well.

"The amount of urine passed by this girl was remarkably small, and it had an alkaline reaction at the commencement of the disease, which, however, speedily disappeared under the use of the lemon juice.

"As regards the question of cure by the excretion of some materies morbi from the blood, even if we admit this as the mode in which the return to a state of health is brought about, it does not appear reasonable to expect that in all cases we should find the kidneys the excreters of the morbific matter; inasmuch as the skin possesses very different degrees of energy in different persons, and in rheumatic disease its excretory power is called into full action. The skin may thus interfere with the regularity of any law laid down in respect to the state of the urine, as it can excrete not only water and carbonic acid, but also a large amount of solid matters during the day, when in the highly active state observed in rheumatism.

"The use of lemon juice, as a remedial agent, has of late years been almost restricted to its administration as a cure for scurvy. It formerly would seem to have enjoyed some considerable reputation as an antisyphilitic. We learn from *Percival's Works*[*] that the juice of lemons has been found also of great service in certain biliary and stomachic derangements, and, as the experience recorded is not without interest in connection with the present subject, I shall here quote the author's words. After relating some experiments made on gall, by the addition of lemon juice and other acids, he proceeds to express an opinion that the beneficial effect is to be traced to its power of 'sweetening putrid acrimony.' The facts recorded are, however, as may be imagined, more valuable than the theory propounded. Our author proceeds: 'A tablespoonful of the juice of lemons, unmixed with anything, is said by an ingenious writer (Whytt on Nervous Diseases), to have repeatedly proved a certain cure for a palpitation of the heart, after many of the medicines called anti-hysteric had been tried in vain. This conjecture is confirmed by a similar case which Dr. Bisset hath related, of a middle-aged gentleman who had a palpitation of the heart, accompanied with some symptoms of the jaundice, and who was completely cured by drinking every evening weak rum, acidulated with the juice of Seville oranges.'

"Cases are also quoted by Percival, from which it would appear that calculous diseases have been greatly benefitted by the use of lemon juice; so much so, indeed, as to have led to a belief that it possessed lithontriptic properties. Sydenham also recommends lemon juice and manna as a remedy for gravel, and speaks of its great efficacy in his own case. The account of his own sufferings and relief may be found in his Works,[†] in the chapter 'de mictu sanguineo a calculo renibus impacto.' He there relates how his nephritic affection formed the sequel to an attack of gout. The probability that the beneficial effects quoted by the authors cited were produced by lemon juice, is, to a certain extent, increased by the experience we have had in the treatment of rheumatic diseases: stomach derangement, disturbance of the function of the heart, and calculous nephritis, all bearing a relation to the rheumatic and gouty diatheses.

---

[*] Vol. iii. p. 105. I am indebted to my friend Dr. Theophilus Thompson for this and other references.

[†] Page 522–3; edition published by the Sydenham Society.

"As regards the theory of the action of lemon juice in the cure of rheumatic and gouty disease, I have but little to say. I recently published the view which I was inclined to take on the subject, but am by no means anxious to place it before the profession as anything but an extremely doubtful matter to my own mind; it being rather to the facts contained in the above cases that I earnestly beg attention.

"Citric acid, the chief ingredient in the juice of the lemon, if considered in the anhydrous state, is composed as follows:—

Carbon - - - - -	4 atoms
Hydrogen - - - - -	2 "
Oxygen - - - - -	4 "

"This shows a great excess of oxygen over and above the quantity required to saturate the hydrogen present, and under such conditions it may be considered probable that, when introduced into the stomach, this excess of oxygen may there be made use of to modify the results of the digestive process. Knowing, then, as we do, that in the class of gouty and rheumatic affections there is a tendency to the introduction of lithic acid into the circulation, in what manner may we suppose this excess of oxygen to assist us? Let us first consider the constitution of lithic acid, and we shall observe the fact, so well known to animal chemists, that its elements may easily be converted into those of urea and carbonic acid, by the addition of water and oxygen. This will be at once apparent from the following diagram:—

	1 atom of lithic acid	$C_{10}\ N_4\ H_4\ O_6$
	4 atoms of water	$H_4\ O_4$
	6 atoms of oxygen	O_6
		$C_{10}\ N_4\ H_8\ O_{16}$
equal to		
	2 atoms of urea	$C_4\ N_4\ H_8\ O_4$
	6 atoms of carbonic acid	$C_6\ O_{12}$
		$C_{10}\ N_4\ H_8\ O_{16}$

"It was reflecting on the exigencies of the case, more especially in reference to the necessity for a supply of oxygen, that the exhibition of lemon juice in gout and rheumatism suggested itself to my mind, and I moreover considered, that probably the small proportion of alkaline citrate present, which, by decomposition during digestion, yields an alkaline carbonate to the blood, might assist in the cure. Whether there be truth or not in this theory matters little, in comparison with the discovery of a remedy, which, I believe, assists in obtaining earlier relief than has heretofore been the case, in a most distressing malady.

"The most marked physiological effect produced by the exhibition of lemon juice is, perhaps, the great diminution in the action of the heart and the lowering of the pulse. The relief from pain is, however, so early obtained, and so much more complete than by other remedies similarly affecting the pulse, that I am disinclined to attribute it entirely to that quality. I was anxious to ascertain whether we should not observe some effect on the pulse by exhibiting the juice to a healthy person, and one of our clinical clerks, Mr. Sanders, immediately volunteered for the experiment. This gentleman took one ounce of the juice three times a day for three days, and carefully noted his pulse, which was naturally full, and 75 in the minute. After five doses, the pulse became much weaker and more compressible, and numbered 70 in the minute—conditions accompanied by a feeling of general depression. On the third day, the pulse became as low as 66, and was very small and compressible. The urine was always acid, and also natural in quantity till the third day, when it increased somewhat; the specific gravity was then 1017, and there was a deficiency of lithic acid.

"It is important to state that the urine has never been rendered alkaline by the administration of lemon juice; in one case, indeed, in which it was alkaline before treatment, it became acid after the juice had been administered. These facts show that its beneficial effects are not attributable to the alkaline citrate contained in it. Had an alkaline condition been produced, then we might have concluded that its action was analogous to that obtained by the exhibition of salts of vegetable acids, such as the acetate and tartrate of potash.

"In order, however, more satisfactorily to determine this question, I evaporated 20 fluidounces of the lemon juice of the apothecary's shop at Guy's Hospital, and incinerated the dried extract. On examining the ash, it proved to contain only 22 grains* of alkaline salts, so that it is not possible to attribute the effects of the lemon juice to the alkaline citrate it contains; the remedy evidently possessing a totally different therapeutical action. In so far, however, as its quantity may be supposed to go, we may regard the alkaline citrate as an advantage. Considering it as a remedy, however, its small proportion is such as almost to reduce the consideration to a par with the notions entertained by the devotees to a whimsical and vulgar absurdity."

Dr. Rees gives the lemon juice in the dose of half an ounce three times a day in camphor mixture.

Art. XXII.—*Report on the Practical Operation of the Law relating to the Importation of Adulterated and Spurious Drugs, Medicines, &c.* By M. J. Bailey, M. D., Special Examiner of that Class of Merchandise in the United States Customs, at the Port of New York. Read before the New York Academy of Medicine, June 6th, 1849. Published by order of the Academy. New York, 1849: 8vo. pp. 20.

It will be remembered by our readers, that, at the meeting of the American Medical Association in Baltimore, in May, 1848, Dr. Thomas O. Edwards, a member of Congress, from Ohio, and chairman of the special committee of the House of Representatives, to which was referred the subject of the importation of worthless, adulterated, and misnamed drugs, made a very interesting communication to the Association on this subject, and that this body appointed a committee to prepare and report a memorial to Congress on the subject. Through the influence of the Association and of other influential bodies, and especially by the efficient and philanthropic exertions of Dr. Edwards, a law was enacted to prevent the importation of worthless, adulterated, and misnamed drugs. Dr. Bailey says that, "On the passage of the bill prohibiting the importation of spurious and adulterated drugs, medicines, medicinal preparations, &c., I was requested by the Hon. Thomas O. Edwards, the able and philanthropic chairman of the special committee of the House, to which that important subject had been referred, to note the practical working of the law at the port of New York, (where three-fourths or more of the importations of that class of merchandise are presented for entry,) and furnish, in such manner as might be most agreeable to myself, a report of the same, prior to the next meeting of the National Medical Association, in order that the information therein contained might have the greatest possible circulation throughout the country."

Dr. Bailey, in compliance with this request, improved the leisure moments allowed him apart from his official duties in preparing the communication under notice.

The law took effect at the port of New York, on the 12th of July, 1848, and the following is a list of the more prominent articles of drugs and medicines, with the quantities, and place whence imported, annexed, which Dr. Bailey has, during the months named, rejected under its provisions, to wit:—

---

* This ash contained about 2.5 grains of chloride, and also some traces of phosphate, so we may fairly conclude that an ounce of the juice contains less than a grain of alkaline citrate.

“July, 1848,	7,581 lbs.	Rhubarb root,	from Canton.
August,	750 lbs.	Opium,	do. Marseilles.
do.	2,940 lbs.	Jalap root,	do. Tampico.
do.	2,249 lbs.	Rhubarb root,	do. London.
September,	646 lbs.	do. do.	do. do.
do.	1,414 lbs.	Gamboge,	do. do.
do.	545 lbs.	Rhubarb,	do. Hamburg.
do.	1,400 lbs.	Senna,	do. Leghorn.
do.	2,900 lbs.	Spurious Yellow Bark,	do. Bordeaux.
do.	875 lbs.	Rhubarb,	do. Canton.
do.	758 lbs.	Opium,	do. London.
do.	1,783 oz.	Iodine,	do. do.
do.	1,075 lbs.	Rhubarb,	do. Marseilles.
do.	4,275 lbs.	Jalap,	do. Vera Cruz.
October,	788 lbs.	Rhubarb,	do. London.
do.	227 lbs.	Myrrh,	do. do.
do.	13,120 lbs.	Spurious Yellow Bark,	do. Maracaibo.
do.	1,875 lbs.	do. do. do.	do. Bordeaux.
November,	412 lbs.	Myrrh,	do. London.
do.	1,280 oz.	Iodine,	do. Glasgow.
do.	860 lbs.	Opium,	do. Smyrna.
do.	185 lbs.	Rhubarb,	do. London.
December,	156 lbs.	Opium,	do. do.
do.	1,065 lbs.	Myrrh,	do. do.
do.	12,800 lbs.	Spurious Yellow Bark,	do. Santa Martha.
do.	392 lbs.	Jalap,	do. Vera Cruz.
January, 1849,	1,300 lbs.	Pectoral Paste,	do. San Juan.
do.	2,071 lbs.	Rhubarb,	do. London.
do.	3,550 lbs.	Jalap,	do. Havana.
do.	1,930 lbs.	Spurious Bark,	do. Antwerp.
February,	974 lbs.	Rhubarb,	do. London.
do.	1,992 oz.	Iodine,	do. do.
March,	1,104 oz.	Croton Oil,	do. do.
do.	4,894 lbs.	Senna,	do. do.
do.	1,345 lbs.	Spurious Bark,	do. do.
do.	404 lbs.	Opium,	do. do.
do.	1,150 lbs.	Valerian root,	do. Paris.
April,	425 lbs.	Opium,	do. London.
do.	1,273 lbs.	Myrrh,	do. do.
do.	550 lbs.	Jalap,	do. Vera Cruz.
do.	816 lbs.	do.	do. Tampico.
do.	1,450 lbs.	Sarsaparilla,	do. do.
do.	600 lbs.	Spurious Bark,	do. Barranquilla.

“Together with smaller quantities of various articles which have been rejected from time to time, but which it is not necessary to enumerate here—making the entire amount, some 90,000 lbs. of various drugs, &c., which has, up to the present time, been refused.”

This long list of itself affords abundant evidence of the value of the law, but Dr. Bailey brings forward many other statements and considerations in its support, for which we must refer to his report.

The prevention of the importation of adulterated drugs is but one step in the great reform which is needed, and indeed will be of small value unless some means be adopted to prevent *home adulterations.*

On this subject, Dr. Bailey remarks:—

“The strongest, and almost the only argument raised against the passage of the bill when before Congress, was, that it would be ‘offering a premium on home adulterations.’ A distinguished senator, who took this view of the case, admitted that he approved of the *principle* of the bill, and should vote for it, but maintained that the effect would be as he had stated. The friends of the measure pledged themselves to take care of our own people, if Congress would take care of the unprincipled manufacturers, speculators, and dealers abroad; and it is devoutly to be hoped that they will faithfully and fearlessly redeem their pledges at any sacrifice of time, watchfulness, and if needs be, money.

"I, for one, never looked upon the passage of the law in any other light than as the *first important step* towards the great reform so long, and so much needed; and *the profession must only so consider it.* Much yet remains to be done; something more than simple *professions* of friendship to the measure must now be brought into requisition. To suppose that we have none among us engaged, or who *will* engage, in the preparation and sale of spurious and adulterated medicines, is to place a higher estimate upon the conscientious scruples of that portion of our speculating and trading community with whom the almighty dollar is paramount to all other considerations, moral, if not divine, than, from my somewhat extensive observations, I am willing to concede. Even at this early day, the fraudulent work of their hands is but too visible. Within the last month or two, sulphate of quinine, in considerable quantities, bearing the label of Rosengarten & Denis, Philadelphia, has been found in market adulterated to the extent of some twenty or twenty-five per cent. The same may be said of quinine bearing the label of the London Alkaloid Company, London—likewise that bearing the label of Pelletier, Delondre & Lévailant, Paris.

"Now, these frauds were perpetrated by our own people, or among our own people, and after the article, too, had come into the hands of the purchaser. The manufacturers sent them forth pure, and had nothing to do with the sophistication. Each of the firms named stands too high, and deservedly so, to warrant even a suspicion of such unpardonable baseness.

"The materials used for the adulteration of the quinine were found, on analysis, to be *mannite* and *sulphate of barytes*, in about equal weights. The latter article has long been used for this purpose, but not until lately has *mannite* been detected in the sulphate of quinine. It seems to have been ingeniously substituted for salicine, and a somewhat similar substance prepared from the poplar bark; which articles have heretofore been extensively used for like purposes.

"The ingenuity consists in the fact that it is much more difficult to detect the adulterations, when effected by the admixture of *mannite*, than when by the admixture of salicine, &c., while the former can be furnished for less than one-fourth of the latter.

"I have likewise procured, and have now in my possession, a sample of French sulphate of morphine, adulterated by the admixture of some thirty per cent. of *amygdaline*, an article which, in this combination, defies all the ordinary tests for its detection; and which, like the mannite in the quinine above mentioned, can only be found and distinctly characterized in the mother water after the solution and re-crystallization of the true saline portion of the sophisticated compound.

"Some other important medicinal preparations have been spoken of as having been found worthy also to be classed with 'home adulterations;' but, as I have, up to the present time, only been able to obtain samples of impure sulphate of quinine, and of sulphate of morphine, I am in hopes that the opinion expressed relative to the other articles may prove incorrect. Should I, however, find the facts and the particulars as they have been stated to me, when I receive the samples which have been promised, I shall make them the subject of a communication for some one of our medical journals; as I feel that every fraud of the kind should be promptly and fearlessly placed before the public in a manner best calculated to command the attention of the profession generally throughout the country.

"The question now very naturally arises, how comes this new method of sophistication, and why has this heretofore foreign practice been recently transferred to our shores? I reply, that I have good reason to believe that we have at present those among us from abroad, who have so long been engaged in this particular line of business that they have become perfect adepts in this base and deceptive art. For some years past, an extensive chemical establishment has been in operation at Brussels, in Belgium, built up at great expense and care, and expressly designed for the manufacture on a large scale of imitations of all the most important foreign chemical preparations used in medicine; while, at the same time, an agent was travelling in this country making sales, and soliciting orders in all the principal towns on our seaboard. This personage is no stranger to me, as I had to examine and pass his murderous wares through the custom house, in large quantities, until Congress, in enacting the present righteous sanitary measure, gave me the power to reject them. The articles were prepared and put up with consummate skill and neatness; and the imitation was so perfect, that it was impossible for the unsuspecting purchaser to distinguish them from the genuine, notwithstanding that in some instances they did not contain over five per cent. of the substance represented by the label. The only *Christian* act that, as far as I am aware, the agent performed while among us, was to sound the alarm in season; for, since the law went into effect at this port, not a single package from that establishment has been presented for entry; but I regret to say that, if I am correctly informed, one, if not more, of the persons formerly connected with the Brussels' firm, are now in this country, engaged, to some extent, in the same iniquitous business; hence the ingenious adulterations before spoken of. I imagine, however, from certain proceedings which have been instituted, that their career among us will not be of long duration.

"Thus it will be seen that, as far as sophisticated chemical and medicinal preparations are concerned, we have now but little to fear from the foreign manufacturer and speculator, while we have *increased* cause for unceasing vigilance at home, not only as respects the finer preparations, but also that almost equally important class of medicines known to the trade as crude drugs, to wit, opium, barks, roots, medicinal gums, &c. &c., whether in a natural or powdered state; and while each and every article requires at all times the particular attention and scrutiny of the dispensing apothecary and physician, I will here remark, that the article sold and purchased under the entirely too comprehensive name of *Peruvian bark*, requires, in my opinion, much more attention than it has heretofore received either from the apothecary or the profession. It will be seen, by the statement submitted, that the quantity of spurious and worthless cinchona barks which I have thus far rejected, amounts altogether to some thirty-four thousand pounds; and why have I rejected it? Simply because the article containing none, or but a trace of the natural alkaloids of the *true* barks, and consequently possessing no febrifuge properties, is of no more value as a medicine than any other moderately bitter vegetable substance, while, at the same time, it is not only unsafe and improper, but, on account of the large excess of woody fibre it contains, decidedly dangerous to be administered in cases where the genuine bark in substance is called for.

"The several barks here alluded to, although differing in physical appearance, are those generally known in the trade as the red and yellow Maracaibo and Carthagena barks; and, as they resemble the true officinal barks in colour, they have long been used in a powdered state for the purpose of adulterating those barks, or sold to the unsuspecting as the genuine article. This fact shows very clearly why it has long been almost impossible to find on sale in the country, or even in any of our minor drug and apothecary establishments in town, one pound of the red or yellow cinchona bark of the requisite strength and purity; or, in other words, that will afford, on analysis, a per centage of alkaloids corresponding with that produced by the genuine barks. Some samples that have been obtained afforded neither quinine nor cinchonine in any perceptible quantity!! Others less than one-fourth part of the alkaloids found in the true and pure barks; and so upward, according to the extent of the adulteration. From the quality of samples that have been forwarded to me from a distance, I am satisfied that the country is filled with such base mixtures and worthless trash; and it will take some time, with all the watchfulness that the profession can exercise, to get rid of the evil; an evil that must be deeply felt in those sections where the peculiar type of their fevers calls for an almost constant use of the cinchona in one form or another.

"In view of these facts, I have from the first invariably refused to admit these spurious barks, notwithstanding my refusal has subjected me from interested parties to unqualified denunciations and reiterated threats of vengeance, even to expulsion from my post, doubtless to make room for some one of more easy medical virtue. The rejection of no other article of drugs has excited so much indignation; and I regret to remark that the dishonest and unpardonable traffic is held on to by some of our speculating traders with a tenacity truly deplorable; but when I say that the spurious barks cost, delivered in this market, on an average, only some *six cents* a pound, while the genuine costs *eighty* cents, it is not difficult to fathom the cause of these ebullitions of wrath so profusely showered upon me. I shall continue, however, *fearlessly* to do my duty in carrying out the intent of the law, though the heavens fall and I fall with them."

The public, more even than the profession, will be under infinite obligations to Dr. Bailey if he will persist in this course.

The reader will find, in the very able and important report of Dr. Bailey, other statements of interest relating to this subject. We are happy to say that the American Medical Association, at its last meeting, in Boston, appointed a committee of two from each State to note all the facts that come to their knowledge with regard to the adulteration and sophistication of drugs, medicines, chemicals, &c., and to report them at the next annual meeting.

ART. XXIII.—*The Dispensatory of the United States of America.* By GEORGE B. WOOD, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania, &c. &c., and FRANKLIN BACHE, Professor of Chemistry in Jefferson Medical College of Philadelphia. Eighth edition, carefully revised. Philadelphia, Grigg, Elliot & Co., 1849: 8vo. pp. 1380.

WE have so often, on the appearance of the successive editions of this work, expressed the great value we attach to it, and the whole profession are now so well acquainted with its merits, that it is sufficient to announce the issue of a new edition, and to say that the authors have made all the revision and additions which the progress of the science has required. This work is indispensable to every American practitioner and apothecary.

ART. XXIV.—*A Dictionary of Dental Science, Biography, and Medical Terminology.* By CHAPIN A. HARRIS, M. D., D. D. S., Professor of the Principles and Practice of Dental Surgery in the Baltimore College, &c. &c. Philadelphia, Lindsay & Blakiston, 1849: 8vo. pp. 780.

THIS handsomely "got up" volume contains, in a compendious and very convenient form, much valuable information for dentists, and we recommend it as a very useful work to those engaged in that branch of the profession.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Transplantation of Testicles.*—In *Müller's Archives* is a most interesting paper with this title, by Professor Berthold, of Gottingen:—

A series of comparative experiments were made by him: he castrated six young cocks, two and three months old, leaving the wattles, combs, and spurs untouched.

From two of them (*a* and *d*), he removed both testicles. Thenceforth they took on the nature of capons, fighting very seldom and feebly, and giving the well-known monotonous capon crow. Their combs and wattles were pale, and little developed, and the head remained small. About five months after, they were killed; a small scar occupied the place of each testicle, and the seminal duct had degenerated to a mere thread.

From two others (*b* and *e*), only one testicle was removed, the other left in the belly. In two others (*c* and *f*), both testicles were excised; but one belonging to *c* was transplanted into the belly of *f*; and, *vice versâ*, one of its testicles transplanted into *c*, thrust amongst the bowels, and left there.

All four retained the characters of uncastrated fowls; they crowed lustily, frequently fought with each other, and with other young cocks, and exhibited the ordinary inclination for the hens. Their combs and wattles developed like those of others.

The cock *b* was killed two months after; its single testicle was of the ordinary place, but had hypertrophied, and, on section, a white fluid exuded, which contained cells, but no spermatozoa.

On the same day, the remaining three had their well developed comb and wattles excised. The cock *e*, at the same time, was deprived of the remaining testicle; and *c* and *f* examined in the ordinary situation in vain for their transplanted organ.

The now fully castrated *b* never grew comb or wattles; it ceased to concern itself about the hens, and fought no more with its own sex: *c* and *f*, however, reproduced both comb and wattles, and preserved their ordinary chivalrous demeanour. They were killed six months after the transplantation. In *c*, the testicle was found behind the colon and between the ends of the cœca. In *f* it was nearer their middle, but otherwise in the same situation. They were of large size, and received large branches of the mesenteric vessels, which passed towards them, entered, and then took the ordinary course, in relation to their seminal tubes. On incising them, a normal seminal fluid exuded with the ordinary cells and spermatozoa.

The author concludes:—

1. That the testicles are transplantable, and reunite with living tissues, after

their union from the body, not only at their ordinary site, but in an abnormal situation.

2. Like the grafted tree, the organ on this new place still preserves its specific properties, and secretes its specific fluid.

3. It is well known that, after division, a reunion of nerves restores sensation and movement. And it follows, from these experiments, that, as the reunion could not have been one of those originally divided, there are no *specific* seminal nerves; that nerves only are requisite—a strong, nay, almost a fatal objection to the theory that would constitute the sympathetic a *trophic* nerve, or nerve in itself, specifically organized with reference to nutrition.

4. The consensual and antagonistic relations of the life of the individual and the species, seen from puberty to old age, are continued in spite of the separation of the testicles from their ordinary place and nerves, and their removal to another part of the body. These animals were, in all respects, veritable *males.* It would thence follow, that the *consent* in question results from the productive relation of the testicle; that is, through the operation of its secreted fluid immediately upon the blood, and through a corresponding operation of the blood upon the general organism. In this, no doubt, the nervous system takes an important part. These experiments are most interesting, and fully bear out the author's deductions; but the first must be limited to the animals in question, or, at least, must not be hastily extended to higher organizations or older animals. This, however, in no degree impairs the physiological conclusions set forth by the author.

Still, however, the real question that science perpetually asks with a sigh, concerning all secretions, is as undecided as ever. "Why does the testicle secrete semen?"—we can as little answer as ever. Nay, more, let us recollect an important and much more immediate step in the process is wanting—the great agent is unknown.

For how, from these instances, can we determine whether the union of nerves did or did not precede the resumption of secretion? or, let us say, rather, in such young animals, the *perfection* of this process? Yet an answer to this question would be an important addition to our present knowledge.—*Medical Times*, July 21, 1849.

---

2. *On the Minute Anatomy of the Sudorific Organs.* By G. Rainey, Demonstrator of Anatomy in St. Thomas' Hospital. (*Proceedings of Royal Med. and Chirurg. Society*, June 22, 1849.)—The author observes that the epidermis is composed of two very distinct layers—a superficial and a deep layer; the former consisting entirely of epidermic scales, whilst the latter is made up wholly of epidermic cells, excepting where this layer is perforated by the sudoriferous ducts. These layers are distinguishable from one another by the dark colour of the deeper layer appearing to present an undulating border. The fact of only the cells being in one layer, and the scales in another, he observes, is contrary to the opinion generally entertained, that the epidermic cells, produced at the inferior part of this layer, become gradually and progressively changed into epidermic scales, in proportion as they approach the surface. It also renders the explanation of the cause of the spiral course of the sudoriferous ducts more simple; for, as in this layer the epidermic scales undergo no change in their structure, and but very little in their dimensions, the duct, being built up of these scales, must remain the same through the entire thickness of this layer, as when it first entered it. In the superficial layer of the epidermis, the sudoriferous ducts are composed entirely of epidermic scales, so placed that the long diameter of each is parallel with the axis of that part of the passage into which it enters. This part of a duct is destitute of membranous parietes, being merely a passage between epidermic scales. In the deep layer of the epidermis, the sudoriferous ducts are situated above, between flattened epidermic scales, with their long axis placed as before observed; and below, between epidermic cells in different states of development. Now, as some of the lowest of these cells are so imperfectly formed as scarcely to have the character of cells, it must follow that the part of the passage which is situated between such cells cannot have its parietes well defined; and there must be a part in every duct (where

the cells forming it are just coming into existence) so imperfect, that the sweat, in entering it, will pass through little more than a layer of blastema. It is for this reason that the most inferior part of a sudoriferous duct becomes so indistinct, that its termination in the dermic portion cannot be distinctly made out; and it is in this respect that all the delineations of these ducts which the author has seen are incorrect, and convey an erroneous idea of their exact structure. The parietes of these ducts are represented as passing continuously from the dermis into the epidermis, the tube at this part being made to have the same diameter as elsewhere; whilst the fact is that the lower portion of the epidermic part is conical, and narrowest below, being shaped like the end of a cork-screw; and the upper part of the dermic portion of the duct is rather conical also, but its base is above. The part of a duct which is situated between the cutaneous papillæ, contrary to what is generally stated, is, in the place of being straight, very much curved—this being the part in which it gets its spiral form. The dermic portion of the duct is continued from the gland, in a flexuous course, to the dermis, where it terminates by the membrane of which it is formed becoming continuous with the basement membrane of the papillæ. It is lined by a layer of epidermic cells, which gets gradually indistinct towards the gland. Respecting the spiral and conical form of the sudoriferous ducts, it is observed that this can only be acquired in the deep layer of the epidermis, since, in the superficial layer, the scales of which they are built up undergo little or no change after they have once been protruded into it, and the dermic portion of the ducts is totally of a different structure from the epidermic. The form which the ducts take in this layer is attributed to the changes which the cells here undergo, during their transformation from mere nuclei into perfect cells, and their subsequent conversion into scales; these changes being confined entirely to the deep layer of the epidermis. The ducts here become conical by the cells which bound them becoming more and more flattened, vertically, in proportion as they become pressed upwards, the space between them gradually increasing as they acquire the form of scales; besides, this part of a duct is situated in a conical space between the papillæ, where, at its inferior parts, the epidermic cells are much more crowded together than at its upper part. This relative difference between the number of cells, and the space containing them, would allow of their being more easily separated by the secretion passing between them, above than below. Respecting the spiral form, the increase in the dimensions of the epidermic cells during their growth from nuclei to perfect cells, and their subsequent flattening and conversion into epidermic scales, would have a tendency so to alter the thickness of this stratum of the epidermis as to throw the passages between its cells into a more or less zigzag form, as the changes which take place during the formation of cuticle, as well as during that of other structures, do not proceed with perfect uniformity, but are doubtless more active at one period, or in one state of the system, than in another. The author remarks that it is probable the laminated form of the nails, the concentric osseous layers around the Haversian canals, and the length of the coils of the sudoriferous ducts, are the result of certain alternations of activity and repose of the processes by which they are formed. As there are no other glands in the skin of the hands and the feet, the author considers the sweat glands as those which furnish the oily or sebaceous matter with which these parts are anointed; and in the place of considering the sweat as an increase of the vapour, which is at all times given off from the surface as the insensible perspiration, he regards it as an increased secretion of these sebaceous glands; these glands being, in their less active state, sebaceous, and in their more active one, sweat glands. This must be the case in the hands and feet. The vapour, which is exhaled at all times from the skin whilst in its normal state, he regards as the fluid in which the solid material of the cuticle was dissolved, in order that it might be in a fit state to pass through the coat of the capillaries: having become separated from the solid component of the epidermic blastema during the production of epidermic cells, and having penetrated the scaly layer of the cuticle, it would arrive at the surface in a minute state of division: the fluid part of the sebaceous secretion would doubtless form a part of this vapour.—*Lond. Med. Gaz.*, July 20, 1849.

3. *Function of the Cerebellum.*—R. Dunn, Esq., reported to the Royal Medical and Chirurgical Society (March 13, 1849), an interesting case of apoplexy of the cerebellum bearing upon this disputed point.

The patient was a man, fifty-two years of age, whose sight had for some years been much impaired, from an amaurotic affection. The author was first called to attend him in June, 1843, when he was suffering from cephaloma and febrile disturbance. This attack left his sight more impaired. About two years ago, he became unfortunate in business, and from that time his mind was weak and excitable. On the last day of April, 1848, he was seized, during the night, with sickness and faintness, and getting out of bed, fell, as it was thought, in a fainting fit. The author found him in a low, exhausted state, and cold, but complaining of pain, heat, and uneasiness in the back part of his head. The latter symptoms continued for some days. There was no paralysis, but his mind was weaker and more confused than before, and his emotional excitability increased. Early in May, his wife mentioned that he had become subject to a constant desire for sexual intercourse; that his conduct in this respect was very different from what it had been before his late attack. By the advice of the author, he left home for about three weeks, without his wife. On his return, the desire of sexual intercourse was abated, and from this time was gradually lost. There was now observed an unsteadiness of gait, which increased, and for some time before his death was attended by weakness and stiffness of the left leg and foot. On the 6th of September, he was seized with an apoplectic attack, and died in less than four hours. After death, the vessels on the surface of the brain were found turgid. The convolutions of the brain were shrunken, deficient in firmness, and of a dingy-yellow colour. The optic nerves, shrunken and of a dingy colour, were, together with the substance of the brain around them, in the cerebral part of their course, softened. The whole region of the mesocephale had an unhealthy aspect. The interior of the right hemisphere of the cerebellum was a softened, pulpy mass, in the midst of which was an apoplectic clot of the size of a pullet's egg. The softening extended inwardly, beyond the centre of the median lobe, implicating the fibrous strands of the middle and inferior planes; and outwardly, near to the surface of the hemisphere. The whole arterial system of the brain presented the diseased condition which results from cartilaginous and osseous deposit between the coats of the vessels. This state was remarkably apparent in the vertebral arteries, especially in the cerebellar branch, from which the hemorrhage appeared to have taken place. The author regards this state of the vessels as the primary cause of disease. He believes that the first attack in April was of the same nature as the fatal seizure. Around the first apoplectic clot, inflammation, he thinks, was set up in the cerebellum, and this terminated in disorganization. To the inflammatory state of the cerebellum he refers the exaltation of the sexual propensity; to the stage of disorganization, the depression of that feeling, and the disturbance of the powers of locomotion—namely, the tottering gait, from defective power of co-ordination, ending in a weak and stiffened condition of the left leg. He refers to another similar case which had come under his observation. He points out that the median lobe of the cerebellum is a primitive and independent part, and argues that it is the sensory ganglion of the sexual instinct, and belongs to the same category as the optic, olfactory, and auditory ganglia; while he thinks the two cases he has noticed afford pathological proof that another office of the cerebellum is that of a regulator and co-ordinator of the muscular actions, especially of those subservient to locomotion, and to the maintenance of the equilibrium of the body.

In the discussion which followed the reading of this case, Dr. Marshall Hall and Prof. Owen denied that the cerebellum was the seat of sexual instinct, while Dr. Carpenter sustained that view.—*Lancet*, March 24th, 1849.

---

4. *On the Power to repair Damages sustained by Injury, and to Reproduce Lost Parts.*—Mr. Paget, in his extremely interesting lectures delivered before the Royal College of Surgeons, makes the following remarks on this subject:—

"The power to repair the damages sustained by injury, and to reproduce lost parts, appears to belong, in some measure, to all bodies that have definite form and construction. It is not an exclusive property of living beings; for even crystals will repair themselves when, after pieces have been broken from them, they are placed in the same conditions in which they were first formed. I know not what amount of mutual illustration, if any, the repair of crystals and living bodies may afford; but, in any case, we may trace here something like an universal property of bodies that are naturally and orderly constructed; all, in favourable circumstances, can repair at least some of the damages to which they are liable from the violence of external forces.

"But, to speak only of the repair and reproduction that occur in the several orders of the animal kingdom; among these they exist in singularly different degrees, and in such as can be only partially included in rules or general expressions. The general statement sometimes made, that the reparative power in each species bears an inverse ratio to its position in the scale of animal life, is certainly not proved; and many instances are contrary to it, such as the great reparative power possessed by the triton and other lizards, and the apparently complete absence of it in the perfect insects. Rather, the general rule which we may expect to find true, and for which there is already much evidence, may be, that the reparative power bears an inverse proportion to the amount of germ-power consumed in the development and growth of the individual, and in its maintenance in the perfect state.

"Our ideas of the consumption of power in the organization of matter, are, perhaps unavoidably, very vague; yet are there facts enough to prove that the power which can issue from the mysterious properties of a germ is limited; that it is not ever communicated to an indefinite quantity of matter; and there are enough to justify the hypothesis, that the germ power, thus limited, is in some measure consumed in the development of every new structure, and, in a less measure, in the growth and maintenance of those already formed. The instances to which I shall refer are explicable on this hypothesis, and are, therefore, evidences of its probability.

"First, then, it appears constantly true that the reparative power is greater in all parts of the young than of the older individuals of all species. Even when we compare individuals that have all attained their highest development and growth, this rule seems to be true. We know it from general observations of the results of similar injuries and diseases in persons of different ages; numerous as the exceptions may be, the general rule seems true. And it is yet more evidently proved in the case of some lower animals. Spallanzani mentions it expressly in regard to the reproduction of the tail of the tadpole. The quickness with which the work of reproduction is both begun and perfected, was always, in his experiments, in an inverse ratio to the age of the tadpole. He says the same for the reproduction of the legs of salamanders, and it is only in young frogs and toads that any reproduction of the limbs will take place. So, too, in experiments on the repair of fractures, the union of tendons and the like, in the Mammalia; one may see abundant evidence that the vigour and celerity of the process are in an inverse proportion to the animal's age. There is, indeed, some reason to believe that, in the very early period of embryonic life, a true reproduction of parts of limbs may take place, even in the human species; for (not to speak of the possibility that supernumerary members may sometimes have been formed in consequence of accidental fission of the budding limbs of the embryo), there are some cases in which fingers are found on the stumps of arms in such circumstances as justify the belief that, after a limb had been accidentally amputated in the uterus, these had been produced on its remaining portion.

"All these facts agree well with the belief that the germ-power is gradually diminished in the acts of organizing matter for the maintenance of the body; and the difference between the reparative power in children and that in adults appears so much greater than the difference in adults of different ages, that it is probable the germ-power is more diminished by growth than by mere maintenance.

"However this may be, it seems certain that the capacity for the repair or reproduction of injured parts is much more diminished by development than by growth or maintenance of the body; *i. e.*, much more by those transformations of parts by which they become fitted for higher offices, than by the multiplication or maintenance of those that are already perfect in their kind and function. In other words, to improve a part requires much more, and more perfect, formative power, than to increase it does.

"This, as a general principle, is exemplified in many instances. In the greater part of congenital malformations, we find arrest of development, but no hindrance of growth; as a heart, in which a septum fails to be developed, yet grows to its full bulk. So, if tadpoles be excluded from due light and heat, their development will be much retarded, but their growth will be less checked. So, too, in the miscalled cultivation and improvement of flowers, growth is increased, but development is hindered; and an excess of coloured leaves is formed, instead of the due number of male and female organs. Or, again, in an old ulcer or a sinus, cells may be continually reproduced, maintaining or even increasing the granulations, yet they will not develop themselves into cellular tissue and cuticle for the healing of the part; and so, even when repair and reproduction have gone far towards their ultimate achievement, that which takes a longer time, and oftener fails, is the improvement, the perfecting of the new material, by its final development. This is observed in all cases of reproduced limbs, and even in ordinary scars.

"These facts (and there are many others like them) seem to justify the expression that, not only more favourable conditions, but also a larger amount of organizing force, is expended in development than in growth. If we may thus interpret the facts, they will be collateral evidence for the belief that, in different species of animals, the reparative power will bear an inverse ratio to the amount of development already passed through; so that, for each species, in its perfect state, the reparative power might be measured by the degree of likeness between the embryonic and the perfect form, structure, and composition. The greater the sum of dissimilarities in all these respects between the embryo and the perfect animal, the less seems to be the reparative power in the latter.

"It is consistent with this that the highest amount of reparative power exists in those lowest polypes, in which, as my colleague has so ably argued, the materials of the germ mass yet remain, not transformed, but multiplied, and, as it were, grouped into the shape of their bodies. In the fresh water hydra, the power of the germ appears communicated without loss to all the cells that descend by multiplication from the original germ cells; provided only the cells are not developed into higher forms or into subserviency to special functions. In the hydra viridis, and hydra fusca, it seems literally true that any minute cluster of cells derived by mere multiplication from those of the germ mass, may, after being separated from the perfect body, reproduce the perfect form. This is the general truth of the numerous experiments performed on hydræ by Trembley, Roesel, and others. They have been so often quoted, that I need not do more than mention the greatest instances of reproductive power that they showed.

"Trembley cut a hydra into four pieces; each became a perfect hydra; and while they were growing, he cut each of these four into two or three. These fractions of the quarters being on their way to become perfect, he again divided these, and thus he went on, till from the one hydra he obtained fifty. All these became perfect; he kept many of them for more than two years, and they multiplied by their natural gemmation just as much as others that had never been divided. So that a division by fifty did not perceptibly diminish the power of the germ present in the polype that was thus subdivided. Again, he cut similar polypes longitudinally, and in an hour or less each half had rolled itself, and seamed up its cut edges, so as to be a perfect hydra. He split them into four—he quartered them—he cut them into as many pieces as he could, and nearly every piece became a perfect hydra. He slit one into seven pieces, leaving them all connected by the tail, and the hydra became seven-headed, and he saw all the heads eating at the same time. He cut off the seven heads, and, hydra-like, they sprang forth again. And even the fabulist dared not invent such a prodigy as the naturalist now saw. The heads of the Lernæan hydra perished after excision; the heads of this hydra grew for themselves bodies, and multiplied with as much vigour as their parent-trunk.

"Now these instances may suffice to show that in the lowest polypes the process of reproduction after injury confounds itself with that of their natural generation by gemmation, or, as it probably more rarely happens, by spontaneous fission. We cannot discern a distinction between them; and there are some things which seem to prove the identity of the power which operates on both. Thus, in both alike, the formative power is limited according to the specific characters of the hydra; immense as the power of increase is, which may be brought into action by the mutilations of the hydra, yet that power cannot be made to produce a hydra of much more than ordinary size, or to raise one above its ordinary specific characters. And again, the identity of the power is shown in this,—that the natural act of gemmation retards that of reproduction after injury. Trembley particularly observes that, when a hydra, from which the head and tentacula had been cut off, gemmated, the reproduction of the tentacula was retarded soon after the gemmule appeared.

"The instance of the hydra is only one of many proving it to be a general law, that a large power of repair and reproduction after injury exists in the species in which propagation by spontaneous fission, or by gemmation, is possible. I need not say how consistent this is with Professor Owen's doctrine,—that partheno-genesis, or the capacity of generating without previous impregnation of the parent, is dependent on a retention of a part of the original germ-cells, or of their direct and untransformed descendants, within the body of that parent. Wherever such cells are, there is the power, without the need of impregnation, of producing a new individual; and in all the instances in which such cells form part of the general substance or parenchyma of the body, an injury may be said to act only as a stimulus, exciting the premature exercise of a ready power, which, in the natural case, appears as the generative, but, in the accidental case, appears as the reparative power.

"I need not enumerate the species which manifest this coincidence of the power of propagating by gemmation or fission, and of reproducing large portions of the body, and even of reconstructing, from fragments, the whole body. They include, as chief examples, the actineæ—which, after bisection, form two perfect individuals—and the holothuriæ, which, as Sir J. G. Dalyell has observed, when hurt or handled, will eject all their viscera, leaving their body a mere empty sac, and yet in three or four months will have all their viscera regenerated. They include, also, from among the anellata, the young nereids, and those species of nais, on which Bonnet, Spallanzani, and others, made their marvellous experiments—experiments of which the climax seemed to be achieved when a nais was cut by M. Lyonnet into thirty or forty separate pieces, and there were produced from these fragments as many perfect individuals.

"Instead of dwelling on these instances, let me mention some observations, made by Sir J. G. Dalyell, upon other polypes, which seem calculated to illustrate in a remarkable manner the general laws of the reparative processes in even the higher animals.

"In the hydra tuba—the species of which he has traced that marvellous development into medusæ—he has found that, when cut in halves, each half may regain the perfect form; but this perfect form is regained only very slowly, and, as it were, by a gradual improvement of parts that are, at first, ill-formed. The diagram, copied from his plate, shows these stages of improvement. The fact may possibly be explained (as he suggests) by the mutilation having disturbed the progress of the hydra in its development of young medusæ; for the experiment was made in March, nearly at the time when the series of changes should have commenced. But, if I may venture not to accept the suggestion of so admirable an observer, I should suspect rather that this is an instance of gradual recovery of perfection, such as we see more generally in the repair of injuries and diseases in the higher animals.

"He has noticed something of the same kind, and more definite, in the tubularia indivisa, one of his experiments on which is illustrated by this diagram, copied from his representation of it. A fine specimen was cut near its root, and after the natural fall of its head, the summit of its stem was cloven. An imperfect head was first produced, at right angles to the stem, from one portion of the cleft; after its fall, another and more nearly perfect one was regenerated, and, as it grew, improved yet more. A third appeared, and then a fourth, which was yet more nearly perfect, though the stem was thick, and the tentacula imperfect. The cleft was almost healed; and now a fifth head was formed quite perfect; and after it, as perfectly, a sixth and seventh head. All these were produced in fifteen months.

"The lower half of this specimen had been cut off four months after the separation of the stem. Its upper end bore: first, an abortive head; then secondly, one which advanced further in development; a third, much better; and then, in succession, other four, which were all well formed.

"The upper portion of this lower half of the stem now showing signs of decay, a portion was cut from its lowest part, and further manifested the reproductive power of the stem; for three heads were produced from the upper end of the piece cut off, and four from the lower end of the upper piece which had seemed to be decaying. In five hundred and fifty days this specimen had grown twenty-two heads.

"Now, I cannot but think that we have, in these instances of gradual recovery from the effects of injury, a type of that gradual return to the perfect form and composition, which are noticed in the higher animals. Our theory of the process of nutrition leads us to believe that, in the constant mutation of particles in nutrition, those elements of the blood, or of any structure that have been altered by disease, in due time regenerate or die, and are cast off or absorbed, and that those which next succeed to them partake, through the assimilative force, of the same morbid character; but that, every time of renewal, the new particles, under the influence of the germ-power, approach a step nearer to the perfect state. Thus, as it were, each generation of new particles is more nearly perfect, till all the effects of the injury or the disease are quite obliterated. Surely, in the gradual recovery of perfection by these polypes, we have an apt illustration of the theory—one which almost proves its justice."—*Lond. Med. Gazette*, June, 1849.

---

5. *Microscopical Examination of the Contents of the Hepatic Ducts, with Conclusions founded thereon.* By T. Wharton Jones, F. R. S.—In the contents of the larger hepatic ducts there are seen, on microscopical examination: 1st, the detached columnar epithelium cells of the ducts themselves; 2d, free oval nuclei, which appear to have been derived from cells of this kind; 3d, free round nuclei, apparently derived from the proper hepatic cells; 4th, minute granules, free or in amorphous flakes, globules of oil, and fragments of cell walls. In addition to these, in the smaller ducts, are found cells resembling those of the parenchyma of the liver, except in being usually paler, on account of the contained granules and globules being fewer and more minute. Having, by way of comparison, examined the contents of the pancreatic duct, and recognized in it, with its own columnar epithelium, the free nuclei and granular amorphous matter resulting from the disintegration of the secreting cells developed within the vesicles of that gland, the author considers that, from the analogy of the products of the secreting action in the two cases, an argument may be fairly drawn in favour of the analogy in essential nature between the cells of the hepatic parenchyma and the endogenous cells of the pancreas and other glands of ordinary construction. This deduction helps to confirm the view of the structure of the liver propounded by Dr. Leidy.—*Phil. Trans.*, 1848.

ORGANIC CHEMISTRY.

6. *Sugar found in the Blood, Tissue of the Kidney, &c., but not in the Spleen and Pancreas, of a Diabetic Patient, who died suddenly.*—M. Bernard lately examined the body of a diabetic patient, under the care of M. Rayer, who died suddenly on the third day after admission into hospital. The urine, drawn off while the patient was yet warm, contained a large quantity of sugar. The liver, misshapen, and much larger than in the natural state, contained also a large proportion. The kidneys were also enlarged; the left kidney weighed 245 grammes

(nearly eight ounces), and the right, 235 grammes (seven and a half ounces). On washing the tissue of the kidneys, sugar was obtained, but in a much smaller quantity than from the liver. The pancreas and spleen were diminished in size, and contained none; nor was there any in the nervous centres. The blood contained large quantities of sugar, from whatever part it was taken. M. Bernard, in calling to mind a case in which the serum of the blood, left to itself, became acid by the decomposition of sugar, remarks that this bears on a circumstance in the present autopsy. Sugar was found in the serosity which filled the pericardium; but this same alkaline serosity, when removed from the pericardium, became acid in consequence of the decomposition of the sugar. The intestinal and gastric juices, which seem remarkably fitted for the decomposition of sugar, contained none. M. Bernard has met with sugar in the semen of a goat, which had been artificially rendered diabetic. It is interesting to know that, in cases where the tissues and fluids of a diabetic patient can be examined after sudden death, sugar may be found in the blood, liver, and kidneys. The difference in the reaction of the fluids, hitherto referred to the cause which produces the diabetes, is seen to be dependent merely on the decomposition of the sugar.—*Lond. Med. Journ.*, Aug. 1849, from *Gazette des Hôpitaux*, July 10th, 1849.

---

7. *On the Composition of the Salts of the Blood, and of their Relation to the Formation of Vesical Calculi.*—M. Verdeit states that the proportions of the different saline compounds in the blood are greatly affected by the nature of the diet; the blood of animals nourished exclusively on flesh being rich in phosphates, with alkaline bases, and containing scarcely any alkaline carbonates; whilst the blood of animals restricted to vegetable diet presents the reverse condition, the alkaline carbonates being present in large amount, and the phosphates existing in it in very small quantity. These differences present themselves not only between the blood salts of carnivorous and of herbivorous animals respectively, but also between those of the same animal nourished for a time upon an animal and a vegetable diet exclusively. Thus, the blood of a dog fed upon meat for eighteen days yielded 12.75 parts of alkaline phosphates in 100 of ash; but, when it had been partly fed for fifteen days upon bread and potatoes, the proportion fell to 9 per cent.; "and if," says the author, "I had been able to sustain it on an exclusively vegetable diet, the amount would have fallen to 2 or 3 per cent., as in the blood of the ox or the sheep." These observations, if confirmed, will have a very important bearing upon the treatment of calculous disorders, since urinary deposits consist, in by far the greater number of cases, either of uric acid or of phosphates. Now, uric acid is sparingly soluble in water, and still less so in acid urine [this does not agree with the statements of Liebig, which have been confirmed on this point by others]; but it is rendered much more soluble by the presence of alkalies in the urine. Now, as the acidity of the urine is due to the excess of phosphoric acid, which is the result of an animal diet, a vegetable diet, which will render the urine alkaline like that of the herbivorous animals, is indicated. On the other hand, if the phosphates constitute the materials of the deposit, their amount in the blood and urine may be lowered in the same manner.—*Brit. and For. Med.-Chirurg. Rev.*, July, 1849, from *Gazette Médicale*, June, 1849.

---

8. *Investigations and Experiments on Human Blood.* — Dr. Giovanni Polli, well known by his iatro-chemical labours, has published, in the *Giornale Lombardo di Scienze, &c.*, a memoir on human blood. Of this highly interesting paper we shall give a brief analysis.

Buffy Coat.—Dr. Polli thinks, with many other pathologists, that the formation of this substance depends on the greater or less rapidity of the coagulation. The white, depressed, and very thick buffy coat points to blood slow in coagulating, and rich in fibrine; the clot is then dark red, and so much the softer as the buffy coat is firmer. The gelatiniform coat indicates, likewise, slow coagulation, but a diminution in the amount of fibrine. A rugose coat denotes the slowest coagulation. A clot both buffed and cupped, and adhering to the parietes of the vessel, results from thin blood which has pretty rapidly coagulated. This latter character generally appears after repeated and abundant bleeding. The grayish and striated coat is connected with a great density of blood and slow coagulation. The question how far the aspect of the blood can serve as a criterion for the further use of venesection, is answered thus:—1. Slow coagulation indicates an excess of strength and inflammation; rapidity of it, weakness and exhaustion. 2. The tardiness of coagulation may be measured by the height and thickness of the coat. 3. The first and twelfth ounce, in a venesection of twelve ounces, coagulate within different spaces of time, and present, therefore, different coats. 4. In bleeding to syncope, the last portions of the blood coagulate rapidly, and are not buffed, though the first showed the reverse phenomena. 5. When bleeding is performed in the stage of oppression, which precedes asphyxia or apoplexy, the first portions of the blood coagulate rapidly, and without buffy surface; the latter portions, particularly when the circulation is re-established, present the contrary appearances. 6. In the different evacuations of blood which have taken place in successfully combating an inflammation, the first portions of the blood, towards the development of the affection, coagulate rapidly, and are very little buffed; whilst the latter portions of the same evacuations coagulate slowly, and have a thicker coat. The two extreme portions of one venesection follow the same progress, as to coagulation and the buffy surface, as the disease itself. Lastly, towards the latter end of the disease, the last portions of one bleeding are quick in coagulating, and are not much buffed; whilst the first coagulate more slowly, and are more buffed. 7. When the latter portion of the bleeding presents a slower coagulation than the first, the patient experiences much less weakness, and more liberty in the circulation and the functions, towards the end than at the beginning of the bleeding. This is a proof that he feels the disease more than the abstraction of blood; bleeding is then indicated, and useful. 8. When the latter portion of the bleeding coagulates more quickly than the first, it shows that the inflammation is yielding to the treatment; or that the patient is near syncope or weakness. Bleeding may, in such a case, be still indicated, but it should be used with moderation. 9. If the two extreme portions of the bleeding coagulate slowly, and present the same coat; if the inflammation is not accompanied by an oppression of the circulation; or if the patient bears the abstraction of blood without giving any signs of exhaustion, bleeding is still indicated. 10. If the two extreme portions of the bleeding coagulate rapidly, and the last still more quickly than the first, there is no longer any excess of strength to be overcome; any further abstraction of blood would merely weaken the patient, and is clearly counterindicated. 11. The indication furnished by the two extreme portions of the bleeding extends over the space of about twelve hours; it may extend further, if the disease is giving way, but may still vary, from the presence of a new exacerbation.

Fibrine.—The mere augmentation of fibrine in the blood is connected with an inflammation in the first degree. When the same fibrine coagulates slowly, a higher degree of inflammation is indicated; and rarefied fibrin points to a still higher degree than the last; but complete resolution is still possible. Each of these modifications of the fibrin is made manifest by a peculiar state of the clot.

Influence of Venesection on the Quantity and Density of the Blood in Circulation.—By means of the areometer, Dr. Polli has ascertained that the last portions of an emission of blood have a less density than the first. This diminution in the density indicates the introduction into the mass of the blood of a thinner fluid which is diluting it. By this circumstance may be calculated how much fluid is introduced at each bleeding, by observing the diminution in the density. By numerous experiments, the author is led approximatively to estimate the loss produced by an ordinary bleeding to a thirtieth of the blood then left in the system; and the amount of serosity absorbed in the interval of one venesection to the other, in twelve hours, to double that fraction.

Quality of the Blood.—1. The diminution in the density of the blood, produced by bleeding, does not bear equally upon all the constituents of that fluid. 2. Abstraction of blood does not diminish the proportion of fibrin remaining in the economy; it may even increase it at the expense of the globules dissolved by the new serosity, or those which are obtained from the substance of the muscles. 3. Repeated bleedings, carried to a certain extent, instead of producing on the serum of the blood the impoverishing effect which the other materials of the blood suffer, increase the density of the serum. 4. A large venesection, performed at once, produces effects different from those resulting from the abstraction of the same amount of blood taken at various times. The impoverishing effect of a single large bleeding is three times greater than that produced by taking away the same quantity of blood at several times. 5. Bleeding, carried too far, is apt to cause the generation of false membranes, and favour serous effusions. 6. The temperature of the blood falls at once, on venesection being performed, but soon becomes higher than what it was before the abstraction of blood.

Motion of the Blood.—1. Emissions of blood always have the effect of producing a movement of the mass of the blood in the capillaries, in virtue of which the blood presses towards the opening which habitually gives it passage. 2. Abstraction of blood from the venous branch of a little venous vascular system causes a more rapid motion, not only as regards the blood of the neighbouring venous twigs, but likewise in the corresponding arteries. 3. Gravity exercises in the capillaries, as well as in the larger vessels, a decided action on the circulation of the blood, which action may be made available in the abstraction of blood. 4. Venesection, with man, as well as the lower animals, has the effect of accelerating the pulse. 5. Abstraction of blood, both in animals and man, renders the action of the heart apparent, and allows those arterial twigs to be seen which are not perceivable in the ordinary state. 6. Bleeding to syncope renders the pulse slower. 7. Repeated bleedings have a tendency, not only to accelerate the circulation, but also to increase the frequency of respiration; and these two effects are very slow in disappearing.—*Lancet*, Aug. 4, 1849.

MATERIA MEDICA AND PHARMACY.

9. *On Glycerine and its Therapeutic Uses.*—The employment of glycerine as a local application in the treatment of deafness, and also for other purposes as a medicinal agent, has induced us to offer a few remarks on the preparation and properties of this hitherto neglected body.

To obtain glycerine, any fatty matter is saponified by a caustic alkali. The solution being decomposed by tartaric acid, which precipitates the fatty acid, is to be evaporated, and the glycerine dissolved out by strong alcohol. For medicinal use, it is best obtained by evaporating the water used in making *emplastrum plumbi.* Any lead which it may contain is removed by a stream of sulphuretted hydrogen passed through it when in a diluted state. If necessary, it may be boiled with animal charcoal, filtered, and evaporated.

It is a colourless syrup, sp. gr. = 1.26; it dissolves in water and alcohol, but is insoluble in ether (Kane's Chemistry, 1849, p. 872). Glycerine undergoes no change by keeping, but it is decomposed by heat; and when mixed with yeast, and kept in a warm place, is gradually decomposed, and converted into *metacetonic acid.* Its formula is $C_6H_7O_5 + Aq$.

Glycerine has a strong attraction for moisture, and being of a bland, innocuous nature, it is obviously well adapted to afford a permanent moist covering to any part of the body to which it may be applied. It was first employed by Mr. Yearsley in cases of deafness, arising from partial destruction of the membrane of the tympanum, and Mr. J. Wakley and others have extended its employment to all cases of deafness accompanied by dryness of the external meatus, and it is probable that in some cases of this kind it may be more serviceable than the almond oil commonly employed to remedy a deficiency of cerumen. Dr. Paterson, of Edinburgh, has obtained some improvement in one of three cases in which he applied it. A small piece of cotton wool is moistened with the glycerine, and introduced into the ear. When there is loss or partial destruction of the tympanum, we are directed to use a very small quantity of wool, and to moisten it well with the glycerine. This is passed to the site of the membrane, and when there, "the spot must be found which it is indispensable the wool should occupy and cover; for then only, and not till then, will success attend the application, and the patient regain the hearing."

Glycerine has been employed also as a local application in psoriasis by Mr. Startin, and, it is said, with advantage.—*Monthly Retrospect*, Aug. 1849, from *Pharm. Journ.*, *Med. Times*, and *Lancet.*

---

10. *On Large Doses of Subnitrate of Bismuth in Gastro-Intestinal Affections.*—M. Monneret states that he has been for some years engaged in experimenting upon the medicinal qualities of this substance, and that he finds that, given in far larger doses than are supposed to be permissible, it is of the greatest value in gastro-intestinal affections, especially those attended with fluxes.

Simple Diarrhœa.—It is especially in the diarrhœa of infants, resulting from imperfect lactation, that he has found it so very useful, large doses curing such in a few days. So, too, after weaning, and the injudicious diet so often adopted, the bismuth, in doses of three teaspoonfuls a day, soon removes all symptoms of disordered digestion, especially the serous diarrhœa so often produced in these cases. Simple diarrhœa is of much rarer occurrence in the adult; still, examples are met with in which we cannot attribute it to either phlegmasia or ulceration of the intestines, as in the granular disease of the kidneys, in chlorotic women, in women become anemic from cancerous degeneration of the uterus, and in some cases of chronic disease of the heart, or in commencing phthisis. Those cases in which the diarrhœa is serous, and results from an atonic state of the gastro-intestinal membranes, best yield to this medicine. It should be given in gradually increasing quantities from two drachms to twelve or more per diem.

Diarrhœa symptomatic of Intestinal Lesion.—In spite of the presence of symptoms indicative of inflammatory action, the author has frequently administered the bismuth to children with great success. So, too, he has found it very useful in some subjects of phthisis suffering from obstinate colliquative diarrhœa, and even in the diarrhœa of typhoid fever, when the intestinal canal was certainly the seat of very numerous ulcerations. In this last case, its utility is not very permanent; but it has the advantage of inducing the tolerance of articles of diet or medicine, which, without it, would be rejected.

Cholerine.—The frequency with which gastro-intestinal disturbance precedes true cholera is well known, and the desirability of its suppression is evident; and to this end large doses of bismuth succeed better than any other means. It is most suitable in the cases in which with the diarrhœa there are nausea, vomiting, gastralgia, colicky pains, borborygmi, and anorexia. The cases are innumerable, in which the author has been enabled rapidly to relieve these symptoms without any aid from opium, by giving eight or ten drachms per diem. The only inconvenience resulting is a certain amount of constipation.

Gastralgia.—Various observers have already admitted the great utility of this substance, both in idiopathic gastralgia and in the forms dependent upon hysteria, hypochondriasis, chlorosis, &c. &c.; but it has frequently failed in the hands of others, by being given in doses of two or three scruples per diem, in place of twelve or fifteen drachms; and it is taken with such ease, that the patients voluntarily continue its employment after the pain has ceased, until the gastro-intestinal functions are thoroughly re-established. The idiopathic forms of gastralgia, so often met with in sedentary or literary persons, and in those suffering from depressing emotions, or from abuse of alcohol or coffee, are those which are most successfully combated. It has often, too, enabled the stomach to bear those tonic aliments, whose slow and painful digestion, accompanied by cephalalgia, drowsiness, and pain in the back and limbs, is so often observed in chloro-anemic patients. This medicine produces only a temporary relief in gastralgia, dependent upon organic disease of the stomach, except when this viscus secretes a large quantity of acid fluid.

Vomiting.—Vomiting may depend upon a simple gastric neurosis, and then the bismuth can be very usefully employed. It is also useful in the vomiting of pregnancy, and that accompanying dysmenorrhœa; but its efficacy is less certain than in affections of the gastro-intestinal tube, and is never so great as when diarrhœa, colic, and flatus are present. From whatever cause pain manifests itself during digestion, we may relieve it by mixing the subnitrate freely with the articles of food.

Administration and Action.—It should be given in powder, and best so with the first spoonful of broth or gruel. It excites no disgust, especially if placed between two bits of bread soaked in broth. Children take it readily with milk or ptisans. The author has never given less than from two to three drachms per diem, nor more than twenty, and he has never observed the slightest inconvenience from these large doses; and it is his custom to give it to the children in his hospital by spoonfuls or tablespoonfuls, without observing more exactitude, so innocuous is it. So imperfectly is this fact known, that the chemists hesitate in preparing his prescriptions in which these large doses are ordered. The author cannot conceive why this substance was ever set down as an irritant poison, as he has never found the slightest irritation from the largest doses given to either the healthy or the sick; and post-mortem examination proves that, beyond patches of black discoloration, it produces no effect on the mucous membrane, the consistence of this remaining quite normal. The action of the substance on the canal seems to be quite negative, that is to say, the anormal symptoms for which it was prescribed quickly disappear. Great attention has failed also to detect any marked effect upon any other part of the system. Perhaps the urine is somewhat increased, and the pulse becomes slower; but this is probably due to the relief of the gastro-intestinal affection. The action of bismuth is then purely a *local* one; and this local action, so far from being an irritant one, as so commonly stated, diminishes the activity of the phenomena of which the mucous membrane is the seat. It is not to be supposed, however, that this inert substance can act actively and directly upon the canal, as a soluble body after absorption does; and it is probable that it acts merely as an inert body, just as charcoal might act, mechanically protecting the over-excited secretory organs and papillæ of the nerves from the too immediate contact of the fluids, and especially of aliments. By its mechanical apposition, it limits the amount of exhalation. The allegation of its antispasmodic properties has solely arisen from observing the diminution of the symptoms, without considering whether this might not arise negatively from the preservation of the gastro-intestinal surface from the causes of irritation. In this way, we might call darkness an antispasmodic, because it gives repose to the retina, and tends to subdue the irritation which gives rise to photophobia.—*Brit. and For. Med.-Chirurg. Rev.*, from *Gaz. Méd. de Paris*, Nos. 15 and 16.

---

11. *Concealing the Taste of Fish Oil.*—Now that the swallowing cod-liver oil bids fair to become the fashionable mania of the day, it may be as well to state the simple and effectual means communicated by M. Fredericq, of disguising its abominable taste. This merely consists in masticating a morsel of dried orange peel just before and just after swallowing the dose.—*Rev. Med.-Chir.*, tom. v.

[We have employed this means in one case, and with a very satisfactory result. The patient states that the taste of the oil is entirely disguised, by the use of the orange peel.]

---

12. *Therapeutic Action of Aconitum Napellus.*—The following is an abridgment of papers, by M. Tessier, on this subject, in the *Gazette Médicale de Lyon*, for 15th and 31st January, 1849:—

Aconite has three modes of action, viz.: a *narcotic*, an *antiphlogistic*, and a *special action on the skin.*

1. Narcotic Action.—Some deny that aconite acts in this way; but, nevertheless, the fact is incontestable. It is sufficient to place some drops of the tincture on the tongue, to be satisfied of the narcotic action on the nervous system; for it excites a very decided feeling of numbness in that organ. Besides, when a full dose is administered, it is no uncommon thing to observe delusions, vertigo, collapse, and delirium—in fact, such effects are known to follow opium and poisons from the family *Solaneæ.* In painful diseases, too, it often gives a wonderful immunity from pain. I have administered Aconite

in a great number of painful diseases—in dull pains in the bones, in facial neuralgia, in toothache, sciatica, cancer, &c.; and have observed effects which, from their diversity, well merit attention. While morphia, with a few very rare exceptions, calms every species of pain, aconite only relieves a certain special class. Thus I have never been able, by means of it, to assuage the pain of exostosis, cancer, myelitis, nephritis, gastralgia, or whitlow; but, on the other hand, I have obtained the best results from its use in such painful affections as have a catarrhal or rheumatismal cause, along with disordered function of the skin, such as rheumatism, angina, toothache, &c. Aconite is, then, in a certain class of cases, a narcotic agent (*agent stupéfiant*), but this action is subordinate to another, afterwards to be spoken of.

2. Antiphlogistic Action.—The reality of this mode of operation is believed in by Dr. Fleming; by Dr. Giacomini, who places aconite among the hyposthenic arterial remedies; and by the homœopaths, who affirm that this medicine may be used as a substitute for bleeding in the most urgent cases. To solve the question, as to the existence of antiphlogistic properties, it will not do (like Dr. Fleming), to choose cases of rheumatism, bronchitis, pneumonia, erysipelas, or neuralgia, all of which can usually be cured without the abstraction of blood: but we must take diseases in which bleedings are regarded as indispensable, as inflammation of the brain, apoplexy, peritonitis, hypertrophy of the heart, inflammatory fever, and ophthalmia from the introduction of a foreign body into the eye. In my experiments with aconite on the latter class of cases, I have not met with a single instance in which the aconite could usefully be preferred to bleeding. I have also given it in active hemorrhages, in hæmoptysis, and in menorrhagia—and without any advantage. From my observations, aconite does not appear to be more suitable to the plethoric: and upon the whole, I am inclined to think that it answers best with persons of a nervous or lymphatic temperament, and especially with those predisposed to rheumatismal and catarrhal affections. I do not, however, maintain that aconite *never* acts as an antiphlogistic: for by and by I am going to mention cases in which it has sensibly reduced the pulse; but then I will show, at the same time, that the action on the circulation was *indirect*, and that it is by regulating another function that aconite diminishes fever.

3. Action on the Skin.—If the principal therapeutic action of aconite be neither narcotic and calmative, nor antiphlogistic, what is it? My reply is, that *the special action of aconite is on the skin.* It possesses the property of eliminating from the vessels of the skin the hurtful matter, and of re-establishing the cutaneous functions when deranged by checked transpiration, or by some virus. I think that it has the special power of controlling diseases arising from cold, and others in which a morbid principle is retained in the cutaneous tissues, as occurs in the exanthematous fevers. It is a suitable medicine in all those diseases in which the function of the skin is disordered, as in articular and muscular rheumatism, as well as in rheumatism of the nerves, including sciatica and odontalgia; also in affections of the mucous membranes, such as bronchitis, etc.; likewise in the exanthemata.

Diseases in which Aconite is used.—Courbature.—A bruised feeling in the limbs, creeping sensations on the surface, lassitude, headache, and general discomfort, constitute the group of symptoms called by this name: and they are also symptoms which specially indicate the use of aconite. The desired relief will generally follow, by taking daily from five to ten drops of the alcoholic tincture, in a little water, or bland vegetable infusion.

Catarrhal Fever, as Hufeland showed, is caused by the suspension of the active functions of the skin. Its physical characters are: alternations of heat and cold, dragging pains in the limbs, increased frequency in the desire to make water, a tendency to sweat, general fever complicated with a local affection, which is generally coryza, angina, or bronchitis. The therapeutic indications are: 1st, To re-establish the functions of the skin; 2d, To subdue the irritation of the nose, throat, and bronchial tubes. Aconite fulfils all these intentions. In catarrhal fever, as in *courbature*, it causes the pain in the limbs, the shiverings, and the heats to subside, and, at the same time, greatly simplifies the progress of the affection of the mucous membrane. But aconite does not, unaided, fulfil the second intention, which requires the assistance of opiates, blisters, or such other means as may be suitable.

Angina and Acute Bronchitis.—Like MM. Tessier, of Paris, and Gabalda, the author has seen aconite of much service in these affections, by diminishing, in the former, the pains of deglutition, and in the latter, rendering the fits of coughing much less distressing.

Rheumatism.—To have a correct appreciation of the action of aconite in rheumatism, it is necessary to discriminate between the different forms of rheumatism, for it is very far from possessing the same influence over all of them. The cases in which it succeeds best are—recent rheumatic pains, unaccompanied by swelling and fever, or in which these symptoms are slight. In them, it possesses very great efficacy, and is preferable to bleeding; also to inoculation with morphia, or the use of belladonna—which drugs are mere palliatives of pain. In acute articular rheumatism, accompanied by decided swelling of the joints and ardent fever, aconite is of less value. At the onset, however, of such attacks, it may be administered with advantage, for the purpose of diminishing the afflux of blood [*la fluxion*] to the joints; but when the synovial membrane and the fibrous and ligamentous structures of the joints become inflamed, aconite is useless, and, in my opinion, the best treatment is by large doses of nitrate of potash. In chronic apyrexial rheumatism, the results are good, though not so striking as in recent attacks. By persevering in the use of aconite for six weeks or two months, obstinate rheumatic pains, which have existed for years, may be subdued. Aconite, besides being remedial, possesses preventive properties, by its decided influence over the rheumatic diathesis. When given with this view, it must be continued for months. In all rheumatic affections, but especially those which are chronic, the doses must be much larger than those which are suitable in the diseases formerly spoken of. It is necessary to begin with ten or twenty drops of the alcoholic tincture, and to increase the quantity up to four, six, or eight grammes.*

Eruptive Fevers.—In these affections, as in catarrhal fever, the pulse is brought down: the eruption is also made to come out better. The beneficial influence of aconite on the progress of the exanthemata has already been mentioned, in a work published at Lyons—*La Pharmacopée de Vitet.* It does not appear whether the discovery of this property of the medicine belongs to Vitet, or whether it was stated by him at second hand.

Erysipelas.—M. Tessier agrees with Drs. Fleming and Gabalda in believing that aconite diminishes the duration and the danger of this disease. I would wish to call the attention of surgeons to its value in erysipelas attacking wounds; so that my observations may be verified. I have several times seen a prompt and remarkable amendment follow the daily use of from ten to twenty drops of the tincture, in cases of erysipelas spreading around wounds and ulcers, and accompanied by severe constitutional symptoms.

Pneumonia.—M. Tessier agrees with Dr. Fleming that the aconite, when administered at the commencement, tends to restore the suppressed transpiration from the skin, and may thus give a milder character to the disease: but if inflammation have actively set in—if auscultation reveal engorgement and condensation—we must not anticipate resolution from the exhibition of aconite.

Mode of Administration.—I am truly astonished at Dr. Fleming recommending the largest doses to be used when an antiphlogistic, rather than an anodyne or narcotic, effect is desired. However much I respect so distinguished an authority, I must state that my practice is entirely different. In a case of rheumatism, neuralgia, or any other affection in which I wish the calmative properties of the medicine, I give from ten to twenty drops of the tincture, and gradually augment the dose to three, four, five, or even to eight grammes in the day; but, on the contrary, when I give it in the *courbature* or catarrhal fever, I order only from five to ten drops in the twenty-four hours, and by such doses I bring down the pulse, and diminish all the other febrile symptoms, without inducing any symptoms of poisoning. I prefer the tincture, as more certain than the extract. The tincture, diluted with one or two parts of water, may be applied topically in neuralgia; but used in this way, aconite is an uncertain remedy.—*London Journ. Med.*, June, 1849.

---

* Let us caution our readers not to use the tinctures in common use in this country in such doses. No physician ought to prescribe aconite, without minutely specifying the preparation he intends to be used. That which we prefer is Dr. Fleming's *Tincture of the root*, which is transparent, in colour like sherry wine, and of a slightly bitter taste. The following is the formula: "Take of root of A. Napellus, carefully dried and finely powdered, sixteen ounces troy; rectified spirit, sixteen fluid ounces; macerate for four days; then pack into a percolator; add rectified spirit until twenty ounces of tincture are obtained." Dose, from three to five minims in repeated doses.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *The Microscopic Constituents of Tubercular Deposits.*—Different observers of tubercles have variously stated, (1,) that it contains peculiar "tubercle cells or bodies;" (2,) that it does not contain any definite microscopic constituents; or, (3,) that the crude or miliary variety contains an organic body of definite form.

Albers, of Bonn, in Schmid's "*Jahrbücher,*" No. 2, 1849, confirms the latter of the three opinions. This peculiar body occurs very seldom in miliary tubercles, but more frequently in the infiltrated form. Its size is very variable; its form irregularly roundish; its outer surface is mostly covered with fine amorphous granules; no nucleus exists in its interior, or anything whatever answering to it. This body is the first step to organization, viz., that in which plastic fibrin takes the form of a deformed mass previous to the construction of a cell. But its form is too irregular to afford the presumption of a definite nature; it is merely an aggregation of matter present in crude transparent tubercle, and sometimes called "Enchym-Korper," or pregnant mass. It exists only in the first stage of tubercle, and, in all probability, never undergoes a development into a nucleus, far less into a cell: in the second stage, it disappears by separating into amorphous granules. In this way, the softening of tubercle commences. The amorphous granules increase in number; the "pregnant masses" become smaller and more thickly covered with these granules; and, finally, by the time the tubercle has attained the consistence of pap, they have altogether disappeared; while pus corpuscles are found in their place. The latter appear with the commencement of softening, and increase in number to its termination.

The author states, that these "pregnant masses" are not always present, and that this absence is an indication of a very low capacity for organization. And so their predominance in miliary tubercle indicates the higher capability of this variety—a fact which its more frequent cicatrization corroborates. He regards the suppuration in a tubercular cavity as an effort of nature towards reparation; indeed, he strangely regards it as compensative of the lost tissue; and the pus-secreting membrane he calls a "Regenerations Haut"—membrane of regeneration.

Thus, on the whole, Albers would make out tubercle as even less organized, *i.e.*, containing fewer cell forms, than Rokitansky, Vögel, and other observers. And in any case, whether the few nuclei observed be mere mixture or no, one may notice how little the granular mass deserves the *functional* name of blastema, so erroneously applied to it. The author's "first step to organization" might almost be called "coagulation," since there is nothing here which may not be fairly referred to this well-known process. Finally, the notion of pus being an attempt at "regeneration," is one of those over-strained analogies which could only be imagined after forgetting what regeneration is; or, in other words, an organized body which *never* produces a tissue can scarcely be considered compensative of one.—*Med. Times,* May 5, 1849.

14. *Preparations illustrative of the Course of Tubercle in the Lungs.*—Dr. Bennett exhibited to the Medico-Chirurgical Society of Edinburgh, May 16th,

some preparations in proof of the sanability of phthisis pulmonalis. In one, a large deep cicatrix was seen in the upper lobe of the lung. The patient had died in the infirmary of delirium tremens. From the account given by his friends, it appeared that, about twenty years before his death, he had been affected with the ordinary symptoms of consumption, but that he was restored to health, apparently in consequence of improvement in his circumstances and habits of life. In another preparation, two stellate puckerings on the surface of the lung were found to correspond to two caverns with indurated walls which seemed to be undergoing the process of cure. In other two preparations, numerous small gritty masses were disseminated; these were specimens of abortive miliary tubercle. These appearances were exceedingly frequent; Dr. Bennett had met with them so often in the post-mortem examinations conducted at the Royal Infirmary, that he had stated, in a communication read several years ago before this society, that evidences of tubercular disease were found in one-third or one-fourth of all who die after the age of forty.—*Month. Journ. of Med. Science*, July, 1849.

---

15. *On the Use and Administration of Cod-Liver Oil in Pulmonary Consumption.* By C. J. B. Williams, M.D.—In the important paper which we proceed to analyze, the author arranges the results of his inquiries under three heads: 1. General results of the use of cod-liver oil in phthisis. 2. Its mode of operation. 3. Its preparation and administration.

1. The author states that he has prescribed the oil in above 400 cases of tubercular disease of the lungs in its different stages, of which he has notes of 234. Out of this number the oil disagreed and was discontinued in only nine. In nineteen, it appeared to do no good; while, in the large proportion of 206 out of 234, its use was followed by marked and unequivocal improvement: this improvement varying from a temporary retardation of the progress of the disease, up to a more or less complete restoration to apparent health.

The most numerous cases of lasting improvement were observed in the second stage, in which the tubercular deposit is beginning to soften, the common physical signs being defective movement and breath-sound, with marked dullness and muco-crepitation under the clavicle, or above the scapula, with more decided bronchophony and bronchial breathing towards the seat of the lungs. The effect of the oil, in most of these cases, amounting to near 100, is stated as remarkable. Even in a few days, the cough was mitigated, the expectoration diminished in quantity, the night-sweats ceased, the pulse became slower, and the appetite and strength were gradually improved. The first change manifest in the physical signs was generally a diminution and gradual cessation of the crepitus, the breath-sound becoming drier and clearer; but the dullness and tubular character of the breath and voice-sounds were much more persistent, and rarely exhibited a marked decrease until after several weeks' use of the remedy in conjunction with regular counter-irritation. The author has, however, convinced himself, in several cases, that consolidations have been removed, though in old standing cases the restoration has not been perfect. He states that, even where the health has been completely re-established, the physical signs of consolidation will often persist, and then, if unaccompanied by decided dullness on percussion, he has learnt not to contraindicate recovery, as they appear to depend on puckering of the pulmonary texture, and other changes due to inflammatory deposit.

In cases in the first stage of the disease, the author has used the oil with equally satisfactory results, but of these he cannot speak with equal precision, as many of them were only seen once.

The most striking advantage from the oil he finds to be in the third stage, even when far advanced, where consumption has not only excavated the lungs, but is rapidly wasting the body, with copious purulent expectoration, night-sweats, colliquative diarrhœa, &c. Of the power of the remedy in this stage, he quotes several instructive and encouraging cases. The total number of such cases amounts to sixty-two, in thirty-four of which the improvement is known to have continued up to a recent period. Eleven, after temporary improvement, relapsed and terminated fatally. The author further observes: "The results above stated give to cod-liver oil, even as a tardative or palliative of phthisis, a rank far above any agent hitherto recommended, whether medicinal or regimenal. I have made trials of several other medicines of reputed utility in this disease, but their utility and harmlessness fall so far short of those of cod-liver oil, that I regard them now chiefly as subsidiary means, and the more likely to be useful in proportion as they facilitate the continuance of this superior agent."

2. *Mode of action of cod-liver oil.*—The author does not think it necessary to discuss the question whether the oil owes its efficacy to the iodine contained in it. To suppose that the minute proportion of this ingredient could be the curative agent, would savour of the absurdities of homœopathy, and besides most of the patients had taken iodine in one form or other previously to taking the oil.

It is commonly admitted, the author remarks, that the oil possesses the power of fattening those who take it for any length of time; but this nourishing influence extends beyond the mere deposition of fat. The muscular strength is sensibly increased, and the colour of the cheeks is improved. There is much reason, he thinks, to believe that the oil proves serviceable by supplying the fat molecules, which appear to be essential to healthy nutrition in forming the nuclei of the primary cells; thus supplying a fat which is capable of being readily absorbed and converted into a better plasma, as well as more readily conveyed by the blood to the vicinity of the tubercular deposits, the absorption of which it favours by dissolving the irregularly concreted fat of which the masses are partly composed.

One of the most remarkable effects of the oil, in the second and third stages of the disease, and in other forms of scrofulous disease, with extensive suppuration, is the speedy removal of the sweats and symptoms of hectic. This the author thinks it does by diminishing the unhealthy suppuration which is excited around the tubercle. The author's view of suppuration is, that it consists of a further oxidation of the exudation corpuscle, and he therefore explains the use of the oil in its offering a combustible material, and thus checking the process of oxidation of the tissues.

3. *Preparation and administration.*—The author repudiates the idea held by the Germans, that the brown oil is the most efficacious. He prescribes the pale oil, as free from taste and smell as it can be procured. To obtain this, he advises that the livers of the fish should be obtained as fresh as possible, the pale plump livers being preferred. These should be pounded into a pulp, and mixed with water of 120°, and filtered; after standing, the oil to be decanted, cooled to 50°, and again filtered. The process is to be quickly performed, and in closed vessels. The author begins with a teaspoonful, gradually increasing to a tablespoonful, floating on some aromatic water. He advises it to be taken about an hour and a half after each meal.

In conclusion, he repeats that cod-liver oil is more beneficial in the treatment of pulmonary consumption than any agent, medicinal or dietetic, that has yet been employed.—*Ranking's Abstract*, vol. ix., from *London Journal of Medicine*, Jan. 1849.

---

16. *On the Treatment of Pericarditis; especially on the Effects of Blood-letting and Mercury in that disease.* By John Taylor, M.D., Physician to the Huddersfield Infirmary. (*Proceedings of the Royal Med. and Chirurg. Soc.*, June 22, 1849.)—In this communication, the author has analyzed the forty cases of pericarditis, published in the Lancet in 1845 and 1846, in respect to the treatment of the disease. The cases are divided into two classes: first, those occurring in connection with acute rheumatism, the subjects of which were previously in good health; and secondly, the cases occurring in connection with renal disease, or in persons previously in a bad state of health. The patients in the first class, besides being in good health, were younger, and suffered from much fewer complications than those in the second class. Very few of those in the first class died, whereas all died in the second class. The conclusion from these facts is, that the age and previous health of the patients, and the nature of the complicating diseases, have more influence upon the favourable or unfavourable

termination of pericarditis than any differences in the treatment. The remedies whose effects are examined, are chiefly blood-letting and mercury.

I. *Blood-letting.*—The conclusions arrived at are the following:—

1. The duration of pericarditis increases in proportion as the time is longer between the commencement of the disease and the first bleeding.

2. The duration of the cases bled after the first four days is greater by one-half than that of those bled within the first four days from the invasion of the disease.

3. The influence of bleeding was more marked in the cases in which it was copiously and repeatedly, as well as early, practiced, than in those in which blood was drawn less frequently and more sparingly.

4. Pericarditis is never extinguished at once by bleeding, however early, or however copiously practiced.

5. In several cases, the pericarditis was suspended for a limited time. The suspension in every instance was immediately consequent upon the local abstraction of blood.

6. It is probable that renal has a longer duration than rheumatic pericarditis.

7. Blood-letting must be less copious, and is more frequently inadmissible, in renal, than in rheumatic pericarditis.

8. Blood-letting probably lessens the mortality, inasmuch as it lessens the duration of pericarditis; but direct proof of the reduction of mortality is not to be obtained from these cases.

9. The abstraction of blood by venesection, cupping or leeches, almost invariably relieved the pain at once, but not permanently. There is no reason to believe that any one form of bleeding relieved pain more effectually than another.

10. Blood-letting never lessened the frequency of the pulse, except when there were signs of the inflammation having abated.

11. The tendency to syncope, in some cases of pericarditis, renders it necessary to be very careful in abstracting blood by venesection.

12. Free venesection for pericarditis does not always prevent the subsequent appearance of serious inflammation in other internal organs.

II. Mercury.

1. The cases in which mercury was given within the first four days, had an average duration less by five days than those in which it was given later.

2. The cases in which salivation was produced within the first four days had an average duration less by two days than those in which it occurred later.

3. It is difficult to determine how much of the benefit was due to the mercury, because all the patients who took mercury were likewise bled, and in almost every instance the two remedies were first employed on the same day.

4. The author is inclined to the conclusion that the benefit was due in greater measure to the bleeding than to the mercury—partly, because the duration of the disease was more abbreviated in those who simply began to take mercury, than in those in whom salivation was produced within the first four days. The administration of mercury coincided with the bleeding, but the salivation did not, and the results are just what might be looked for upon the supposition that the benefit was due to the bleeding, and not to the mercury.

5. If the production of salivation had anything like the marked influence in arresting inflammation, and in promoting the removal of its products, which it is currently believed to possess, the duration of the cases of pericarditis after salivation ought to have been much less than it really was. This is proved by a detail of the cases.

(*a.*) Salivation was not followed by any speedy abatement of pericarditis in sixteen cases.

(*b.*) Salivation was followed by pericarditis in five cases.

(*c.*) Salivation was followed by an increase in the extent and intensity of the pericarditis in three cases.

(*d.*) Friction-sound ceased two days before the mouth became sore in two cases.

(*e.*) Salivation was followed by a speedy diminution of the friction-sound in two cases: it did not cease, however, for some days after.

(*f.*) The pericarditis ceased soon after salivation in two cases: in one of them, however, it had been declining for some days before.

(*g.*) Mercury was given, but no salivation was produced in seven cases.

(*h.*) No mercury was given, nor other treatment adopted, in eight cases.

(*i.*) Cases are detailed exhibiting the occurrence of various internal inflammations during the time that salivation was proceeding. The cases comprise examples of endocarditis, pleuro-pneumonia, pneumonia, pleuritis, erysipelas, and rheumatism.

A conclusion rather adverse to the antiphlogistic powers of mercury having been drawn from the facts narrated, the author next examines the evidence upon which the contrary and more prevalent opinion is based, and infers that the evidence is not satisfactory. In the course of this examination, some remarks are offered upon the necessity for the application of the "numerical method" in therapeutical inquiries; and also upon the difference, and its results, between the practice of French and English physicians, in inflammation of serous membranes.—*London Med. Gaz.*, July 20, 1849.

---

17. *Peculiar Forms of Choreic Affections.*—R. B. Todd, M. D., in the *Lumleian Lectures* for 1849, describes a curious affection, of which he has met with two examples in his own practice, and of which five or six have been recorded by Albers of Bremen: the prominent feature of it is the inability to hold a pen and to write for any time. The patient begins to write—writes two or three words—when the hand forthwith is spasmodically extended, the fingers cease to be controllable, the pen falls away from them. If the patient attempt to control his pen hand with the other hand, or if any one else does it for him, the movements become worse, and he suffers excessive pain up the arm; yet all other actions are well done, and the power of the hand to grasp is good. One gentleman thus affected is a man of considerable mental endowments, and he has found it so impossible to overcome the irregular movements of his hand, that he has trained himself to write with his left hand, which he can now do with such facility that he can carry on an extensive correspondence.

There can be no doubt that the impairment of speech, which is sometimes a forerunner of cerebral mischief, and which ought always to be regarded as a warning of such an invasion, is of this character. Emotional excitement will cause hesitation of speech, in many healthy persons: many can do certain things very well if allowed to take their own time; but if hurried and flurried, they are apt to bungle about them very seriously.

In one instance, Dr. T. found well-marked choreic convulsions of the right arm, with disturbed intellect, and gangrene of the toes, associated with extensive colourless softening of the left cerebral hemisphere, involving the optic thalamus.

Allied to the movements of chorea are the fidgets of children, and, perhaps, also those of grown persons. In some children, these fidgety movements are so excessive that the child becomes almost a nuisance in a room. All the muscles are affected; the child incessantly makes grimaces of the most various kinds; every minute he assumes a new attitude; if anything comes in his way, he must handle or touch it: and these irregularities are always the greater when there is derangement of general health. Children thus affected might readily be thrown into the convulsions of chorea by a strong mental emotion.

---

18. *Symptoms of Partial Chorea.* By R. B. Todd, M.D. (*Lumleian Lectures* for 1849.)—1. The affection is not symmetrical, that is to say, one side of the body is more frequently affected than both; or, if both should be affected, one is always much more so than the other. In general, this difference of affection of one side remains with that side, whichever it may be; but in rare instances there is a disposition to shift, and for two or three days the right side will be chiefly affected, and then for a longer or shorter period the left side will exhibit most active movements. This tendency to shift calls to mind a prominent feature of certain rheumatic and gouty affections.

2. Of all the movements which accompany chorea, that of the tongue is the most peculiar and characteristic; indeed, I would call it pathognomonic. The

patient protrudes the tongue with a peculiar thrust to the fullest extent of which it will admit; frequently this is done by one effort; at other times, it requires two or three attempts before it can be accomplished. And the subsequent retraction is also peculiar; the tongue is drawn back, supported and guided by the pressure of the teeth, and often very slowly, and with great caution. Sometimes this peculiar mode of protrusion of the tongue is the precursor of the other choreic symptoms; and if we had frequent opportunities of seeing the cases very early, I have no doubt that this symptom would be found more frequently the harbinger of the more extensive affection. I have, from this symptom only, been able to predict with accuracy that an attack of chorea was coming on.

3. The choreic convulsion is frequently succeeded by a paralytic state of the limbs previously convulsed; the convulsive movements cease, and the limbs remain paralyzed; the paralysis is seldom complete, although considerable. When the choreic convulsion had affected one side, the paralysis will likewise affect the same side; it will be *hemiplegic*, and will resemble very closely hemiplegia from diseased brain, for which it is very apt to be mistaken by those not aware of this fact. Not long ago, a boy was brought to my house for me to advise whether the hemiplegic paralysis under which he suffered should be treated by antiphlogistic means, such as mercury, &c. I soon discovered that the case was one of choreic paralysis, and advised steel and shower baths, and exercise of the limbs; under which he rapidly recovered.

In a very few instances, paralysis *precedes* the choreic convulsion; but, so far as my observation informs me, it is then accompanied by the peculiar thrust of the tongue; by this sign I have been enabled to distinguish it.

That paralysis may occur in this way is evidently a fact of the highest practical interest, whilst it is not devoid of importance as bearing upon the pathology of the disease. Nevertheless, I do not find it noticed in any of the descriptions of the disease in the practical works which I have consulted. The previous history of the case, the absence of any other symptom referable to the head, and the gradual mode of invasion of the paralysis, in addition to the peculiar mode of protrusion of the tongue, will always enable the careful practitioner to distinguish this paralysis from that caused by cerebral lesion.

4. The heart is very frequently morbidly affected in chorea; and this morbid affection shows itself, not in any disturbance of the *rhythm* of the heart, which, so far as my observation extends, never is disturbed, but in a derangement of its sounds. A bellows-sound is frequently present, and is either aortic systolic, when it is almost always an accompaniment of the anæmic state of the patient, or, *much more frequently, mitral systolic*, or *regurgitant*.

I am surprised that this feature of the clinical history of chorea has not attracted more general attention. It has been well known to me for many years, and I described it in the Croonian lectures on the pathology of rheumatism, which were given by me in this theatre six years ago. But to my friend Dr. Addison, of Guy's Hospital, is due, so far as I know, the merit of having first made public the frequent occurrence of this bellows-sound in chorea.

What is the cause of this sound? is it due to any irregularity in the muscular action of the heart? a choreic state of that, as of the external muscles, whereby the action of the valves is disturbed? or is it caused by a morbid deposit on the mitral valves, which prevents their precise action? or can it, like the aortic sound, depend on the anæmic state of the patient?

I shall answer the last question first. The closure of the mitral valves is the result of the mechanical accumulation of fluid in the ventricle, which presses the valves towards the auricle, their tension being maintained by the chordæ tendineæ: this effect will be produced, no matter what may be the nature of the compressing fluid; a mere colourless state of the blood cannot produce mitral regurgitant bellows-sound; some imperfection, either of the valves themselves, or of their mode of apposition, must exist in order to produce such a phenomenon.

It is plain, then, that the bellows-sound must be caused by some disturbance in the action of the mitral valves. What, then, produces the valvular derangement? Can it be any disturbance of the muscular action of the heart, any choreic state of the musculi papillares? I apprehend not; for, as the closure of the valves is not accomplished by the action of the muscles, it would not be affected by any such irregular muscular action. Moreover, no such choreic state of the heart's action could take place without its being indicated by a disturbance of the heart's rhythm, which, of course, would be very readily detected.

Hence, then, we cannot resist the conclusion that the mitral bellows-sound in these cases is due to such an organic lesion as prevents the complete closure of the mitral valves during the systolic effort of the heart.

But now we meet with another question not less important. What can have created this morbid state of the mitral valves? It is rare to meet any symptom of heart affection, either preceding or accompanying the chorea; and the valvular imperfection is often overlooked, and only discovered by careful auscultation of the heart's sounds.

The true answer to this question is, I believe, to be found in the fact that many of the patients who suffer from chorea are of a rheumatic diathesis, and that, in consequence of this rheumatic state, they experience an insidious endocarditis which generally affects the mitral valves.

The proof that rheumatic diathesis and chorea are frequently met together, is derived from these facts—that many of the sufferers from the latter malady, when carefully examined, are found to have previously suffered more or less from chronic articular pains, to have sprung from rheumatic or gouty parents, and to exhibit deranged secretions, such as occur in rheumatic states. I have seen many instances of choreic children passing urine of high specific gravity, loaded with lithates, and sometimes precipitating lithic acid in very notable quantity, and for a considerable time. Choreic patients often suffer from rheumatic fever; and, as the subjects of that fever are very liable to its recurrence, so a child who has once had chorea is apt to have it again and again.—*London Med. Gaz.*, April, 1849.

---

19. *On Catarrh of the Mouth.*—Dr. Pfeufer opposes the prevalent idea that the appearances of the tongue indicate the state of the stomach, and that its loaded state or perverted sensibility shows the existence of gastric affection. He denies that it undergoes greater changes in the diseases of the stomach than in those of any other part of the body. The stomach may be most extensively diseased by cancer, in which hyperæmia or blennorrhœa may be present, and yet the tongue continue clean, and the appetite good, as also may be the case in chronic inflammation of the organ. The tongue may be loaded, and the appetite lost, in that catarrhal state of the mucous membrane of the stomach termed *gastricismus;* but it is by no means rare to find this not the case. The appetite may be gone, and the tongue be quite clean.

On the other hand, changes may occur in the cavity of the mouth without being at all indicative of disease of the stomach; the tongue may be thick and loaded, an indifference to food exist, and the taste be blunted and pasty, yet whatever the person does take produces no gastric suffering. The affection is, in fact, a *catarrh of the cavity of the mouth.* It may come on quite suddenly under the influence of mental emotion; it accompanies a variety of affections of the mouth and throat, and may be excited by various stimulating articles of diet, or by medicines acting as local irritants. It sometimes passes away in a few hours, and at others lasts for days, and seldom requires treatment, and certainly not the use of emetics and purgatives, which are usually resorted to, the diligent rinsing the mouth with cold water hastening its removal. Occasionally, however, the affection lasts for weeks or months, and then is usually treated by a great variety of medicines as an obstinate dyspepsia; those who can afford it being at last sent to the Spas. These means, proper enough in catarrh of the stomach, are here useless; and with a gargle, composed of a grain or two of corrosive sublimate in a pound of water, the author has several times cured in a few days a disease that had resisted the long train of anti-dyspeptic medication for months. Local sources of irritation, too, must be sought; for it has more than once happened to Dr. Pfeufer to relieve cases, by the removal of some sharp fragments of a tooth, which had been subjected to all the approved modes of treating *gastricismus*, and had resisted these, as well as long courses of mineral waters and the like! An acute form is also sometimes very obstinate, recurring again and again, and giving rise to loss of appetite. It is often very analogous to nasal catarrh, with which it is sometimes conjoined, and then the affection of the mucous membrane is primary. In other cases, however, and especially when produced by mental emotion, and when it is so often erroneously attributed to "bile," there is apparently a primary affection of the nerves of taste and sensation of the tongue, and then the catarrhal secretion is secondary.—*Brit. and For. Med.-Chirurg. Rev.*, from *Henle und Pfeufer's Zeitschrift*, Bd. vii. 180.

---

20. *Angina Pharyngea.*—M. Velpeau is of opinion that there are distinctions in this disease, based on the different tissues affected, which it is important to bear in mind. In the first and more frequent variety, the free surface of the mucous membrane is inflamed, the inflammation spreading over the whole pharynx. In a second, the inflammation occupies the tonsils and the mucous membrane in all its reduplications. The third variety is formed by the inflammation of the cellular tissue covering the external surface of the tonsils. In the first form the disease comes on suddenly, but rarely lasts long. It produces redness, but not swelling, and is frequently unattended with fever. It may be often arrested by local application, as alum; and if general treatment, such as bleeding, vomiting, or purging, is indicated, the disease is generally cured in two or three days. In the second form, alum would only exasperate the disease, and general means only slightly modify it. Left to itself, it may last from six to twelve days, often terminating by suppuration. Emetics are only useful in assisting the abscess in breaking. It is an affection of frequent occurrence, but is rarely dangerous even when both tonsils are much swollen.

The third form, *cellular angina*, is a more serious affection. A dull, permanent pain comes on, which at first, not extending to the inner side, does not interfere with deglutition. Owing, too, to the seat of the disease, the tonsil does not swell, but the whole of the affected side, tonsil, and soft palate, is raised by the swelling pushing up the various tissues. There is inflammation also of the corresponding cervical region, the parotidean and subhyoidean depressions becoming filled up with a red, tender, doughy tumefaction. This form of the disease may last from eight to thirty days, and terminate by any of the ordinary consequences of phlegmon. Leeches to the angle of the jaw, and other means of an antiphlogistic character, are indicated, and not unfrequently recourse is obliged to be had to the bistoury to prevent the injurious burrowing of matter; but the danger of wounding some of the important parts situated in this region often obliges us to hesitate. M. Velpeau alludes to a case in which he was about to open an abscess by incision into the pharynx, when, owing to the objections of the patient, he was induced to apply large flying blisters to the angle of the jaw, at the base of the inflamed part, and this was attended with the most complete success in dissipating the inflammation.—*Brit. and For. Med.-Chirurg. Rev.*, from *Gazette des Hôpitaux*, 1849, No. 12.

---

21. *Dropsy after Scarlatina.*—Dr. F. J. Behrend, of Erlangen, has published very valuable observations on dropsy after scarlatina, in the *Journal für Kinderkrankheiten*, for March and April, 1849. The following are the conclusions: 1. Two forms of dropsy occur after scarlet fever, the *nephritic* and the *anæmic*. 2. These distinctions only point out the original evil, which is the cause of the dropsy. 3. In *hydrops nephriticus*, the main affection is a highly congested state of the kidneys, even proceeding to inflammation. 4. This congestion of the kidneys is just as much a specific effect of the scarlatinal poison, as the cutaneous congestion and eruption. 5. As a consequence of the congestion, there is exudation into the kidneys; and, from rupture of capillary vessels, some effusion of blood, which tinges the urine of a dark chocolate-colour. 6. The presence of albumen in the urine is partly the result of exudation, partly of the mixture of blood. 7. The small vessels and tubuli of the kidney are partly compressed, partly obliterated, by the exudation, so as to give a granular appearance: the capillary vessels of the cortical substance are partly empty, partly filled with

exudation-corpuscles, without red blood, which produces the pale-yellow colour of this substance. 8. The tubular substance undertakes the whole function of the kidney. A more powerful flow of blood and urine to this part produces within the tubes a removal and reproduction of epithelium (analogous to the eruption and desquamation in the skin), and finally a discharge of albumen with the urine. 9. The impediment to the function of the cortical substance of the kidneys—the modification to such an extent of the function of the tubuli—prevents the full elimination of urea from the blood. 10. Being retained in the blood, the urea mixes with it; and, in conjunction with the scarlatinal poison, produces nervous symptoms of a narcotic character: delirium, coma, sopor, etc. 11. To this mixture of urea with the blood, as well as to the endeavour to eliminate the scarlatinal poison by the skin, is the watery effusion to be ascribed: the effusion into the serous cavities, is entirely a result of the presence of urea in the blood. 12. The danger attending the dropsy depends on its situation, and on the amount of organic activity which is present. 13. Effusions into the serous cavities are especially dangerous, while cutaneous dropsy is of less moment; and, of the effusions into serous cavities, that into the peritoneal cavity is less dangerous than those into the cerebral and pericardial cavities. 14. The greater the activity of the organism, the less is the danger; for this shows that the blood has not retained any considerable amount of urea. 15. So long as the urine gives evidence of the presence of blood, with epithelium, besides albumen, and has an acid reaction, the danger is less than when it is clear, phosphatic, and at the same time highly albuminous, as this indicates an extensive and progressive degree of poisoning of the blood. 16. The indications of treatment, in cases where the urine contains blood and albumen, and is acid, are to diminish the congestion of the kidneys, and to promote the full elimination of urea. An antiphlogistic and saline treatment is here indicated. 17. As soon as the urine, while it contains albumen, becomes of a pale yellow colour, and ceases to have an acid reaction, the antiphlogistic and saline treatment is improper. It is then necessary to counteract the poisoning of the blood, and to increase its plasticity. Iron and tonic medicines are here indicated. 18. The same treatment is necessary, when a weakly, anæmic child has been seized with dropsy soon after a slight attack of scarlatina. The urine here contains little or no albumen; and the plasticity of the blood is so low, that death will result, if it be not increased by the diligent use of tonics.

---

22. *Hydrophobia.*—Dr. Christison read, before the Med.-Chirurg. Society of Edinburgh (May 16), a communication from Dr. Lucas, of Dalkeith, describing a case of hydrophobia which had occurred there.

The most interesting points in the case were thus summed up by Dr. Lucas: 1st. That eight weeks elapsed between the infliction of the bite and the invasion of hydrophobia. 2d. The wound healed, and did not subsequently become irritated. 3d. With the exception of spasm of the respiratory muscles, no muscular effort was observed independent of volition. 4th. The physiological manifestations consisted in an intense exaltation of sensibility of the cutaneous surface, and of the reflex system of nerves. 5th. The psychological phenomena were a highly developed antagonism between the morbid emotional and normal reflex faculties. 6th. Death took place by exhaustion consequent upon the direct and sympathetic excitement of the nervous system.

Dr. W. T. Gairdner had performed the post-mortem examination, and gave a verbal account of the appearances observed. There was some ecchymosis on the surface of the pleura, likewise in the mucous membrane of the pharynx, and among the muscles of the neck. The right side of the heart contained a small quantity of frothy blood, and a large amount of air; and there was no evidence to show that this appearance was attributable to putrefaction. Dr. G. had seen a similar collection of air in the heart of a patient who had been poisoned by carbonic acid gas. The nervous system had been most carefully examined, especially the origins and course of the eighth pair, but no evidence of inflammation or structural lesion had been detected.

Professor Dick, of the Veterinary College, had long considered the hydrophobia of the human subject a disease of the imagination. It was generally found, upon inquiry, that the patient, after being bitten, became exceedingly apprehensive as to the probable consequences. A policeman, who died in the Royal Infirmary, twelve years ago, had, it was said, neither cared for the bite nor feared its results. Professor D. had himself made careful inquiry regarding his case, and found that the man had been very much alarmed, and had been constantly taking medicine by way of antidote. In the Dalkeith case, although the patient had made no allusion to the bite, he thought it not improbable that imagination was at work. The patient seemed to endeavour to deceive himself, to banish the fearful idea from his mind; yet, though he dared not himself suggest the nature of his disease, he made continual inquiries of those who stood about him, and manifested concern for his sufferings. It was hardly possible that his mother could conceal the truth from him, or that the boy could himself be ignorant of it. Upon this subject, Professor D. proposed to satisfy himself by private inquiries. If, as he believed, the disease was really one of the imagination, he need not point out how useless or how mischievous many of the vaunted remedies must be. With the disease of the lower animals, termed rabies, he was of course familiar. Twelve years ago, it was very prevalent in Edinburgh; he had then seen 120 cases in fourteen months. From that time till recently, he had scarcely seen a case at all; but within the last six weeks he had seen a rabid dog in Glasgow; and some rabid cattle in a Lanarkshire dairy. He believed it not improbable that the disease might soon prevail extensively. It was remarkable, and constituted an argument against the communicability of the disease from the dog to the human subject, that there was no fear of water manifested by rabid animals. Besides, the rabies of dogs was sometimes an epidemic; dogs contracted it without being bitten, and there was not sufficient evidence that a bite ever produced it. The morbid appearances in the dog were ecchymosis about the upper pharynx, and in the nasal cavity, with vascularity extending over the Schneiderian membrane, and over larynx, pharynx, trachea, and œsophagus.

Dr. Bennett thought that the symptoms of hydrophobia clearly pointed out a lesion of the functions presided over by the eighth pair of nerves. It was true, that structural lesion had not been observed in this case, either at the origin or in the course of the eighth pair; it must, however, be recollected, that in these excito-motory diseases, structural lesion was not essential. He quite believed that symptoms like hydrophobia might be induced by fright; a recorded case had proved that a bitten man might even die while the dog that bit him lived. There was, however, no doubt that the disease termed hydrophobia could be communicated from animals to man, and Magendie had caused a dog to die rabid, by inoculating it with saliva from a human subject suffering from hydrophobia.

Dr. Gairdner alluded to the experiments of Dr. Hartwig, of Berlin, as tolerably conclusive evidence, that rabies could be communicated, at least among the lower animals, by inoculation.

Professor Dick attached little importance to Hartwig's experiments, because, although he had laboured at the subject for five years, his inoculations only took effect in very few cases. In similar experiments made in Edinburgh, Professor D. had been uniformly unsuccessful. So convinced was he that the disease was not to be propagated in this way, that he took no extraordinary precautions in handling rabid animals, and had once allowed the saliva of a rabid dog to rest upon a sore upon his hand without any unpleasant consequences.

Dr. Christison had formed a very different estimate of the value of Hartwig's labours, which he thought set this controverted subject for ever at rest. Hartwig had, in five years, made fifty experiments upon the inoculation of canine rabies, using in different experiments different fluids, such as the blood, mucus, and saliva of the rabid animal. In fourteen of these inoculations, he had transmitted the disease from one animal to another, and had succeeded more uniformly with the saliva than with the other fluids employed. It was true that he had failed in some instances, but such failures did not invalidate the results obtained in about one-fourth of his experiments; as well might it be argued that, because vaccination sometimes failed, it was, therefore, impossible to communicate the vaccine virus from child to child. Dr. C. had, many years ago, in Paris, witnessed a series of experiments on the inoculation of rabies. They were performed at the Combat des Animaux, by some hospital "internes," under the direction of some able physiologists. It was found that, when blood was used, the inoculation did not take effect; by far the most effectual medium was the "barve," the peculiar froth which collects about the mouth of the rabid dog. By using this fluid, the French experimenters managed to induce the disease in several successive experiments, and in fact to keep up a *stock* of rabid animals for several months. It was stated by Hartwig that dogs were subject to other diseases resembling rabies; but there was one symptom of the true disease which was never observed in its spurious forms. He alluded to the changed character of the animal's bark—a peculiar, checked, short, sharp, anxious howl. Hartwig, who, as head of the Veterinary College at Berlin, had immense opportunities of observation, laid great stress upon the importance of this symptom; and in the Parisian experiments, the peculiar bark of the rabid dog had been remarked both by the late Dr. Cullen and himself. He suggested to Professor Dick, that, in some of the experiments performed in Edinburgh, and in which negative results were obtained, the animals might possibly have been affected with some of the diseases simulating rabies.

Professor Dick proposed to repeat his experiments when opportunity presented itself, and would feel glad that they should be witnessed by members of the Society. He well knew the bark of the rabid dog, described by Professor Christison, and, whenever he heard it, he could at once pronounce that dog to be rabid, even without seeing it.

The President had, twelve years ago, occasion to treat the only case of hydrophobia which had been seen in the Royal Infirmary for forty years. The patient was the policeman, to whose case Professor Dick had alluded. A very prominent symptom was the ejection of saliva by hawking or spitting, and he presumed that the "pretty copious salivation" described by Dr. Lucas, in the case of the boy at Dalkeith, was of the same description.—*Ibid.*

---

23. *Spasm of the Glottis—Change of Air as a Remedy.*—Mr. John Roberton, in a paper in the *London Medical Gazette* (Jan. 1849), states, that having had an opportunity in the course of practice to treat a number of cases of this always alarming, and somewhat fatal malady, he was led, by the little benefit derived from medicines, to venture on the employment of free exposure to a cool, dry atmosphere, as one of his principal means, more especially in aggravated forms; and, although he cannot affirm its invariable success, in no instance has it proved injurious. It would appear from the cases he has given, that the success of this method has been very considerable,—in a large proportion of instances, decisive. Of course, the exposure has been had recourse to *with due caution*—a condition necessary, however, in the employment of every kind of remedy possessed of power.

Mr. Roberton relates twenty-one cases of the disease which have come under his observation. In reference to these cases, the first thing to be noticed, says Mr. R., is the period of the year at which the crowing commenced—namely, from November to April. Now, as the patients were all of a rank above the labouring class,—had nurses and nurseries,—they would probably be more within doors, be more secluded from the external atmosphere,—in a word, would spend a more artificial life, than they do in the warmer season. Such infants, assuredly, are habituated to a very different mode of living, when compared with those in a lower station, who are to be seen abroad almost in all kinds of weather, daily, throughout the year. Dr. R. would not be understood as maintaining that this nursery seclusion explains why the complaint so commonly occurs in winter and spring; but the fact that it is rare in the families of the working classes, seems in favour of such a conclusion.

The age at the accession of the disease was in most from about the fifth to the twelfth month. Above twelve months, there were only three cases, and the highest of these is fifteen months.

In connection with the ages of the infants, is the *kind* of teeth the irritation from which may be regarded as perhaps the chief cause of the disease. In seventeen, the irritating teeth were the incisor; in three, the bicuspid; and in one, the canine.

With reference to the influence of sex in predisposing to child-crowing, this probably is little if anything. The proportions in the foregoing instances, are nine females to twelve males. It is otherwise, however, seemingly with the mortality; for in eight cases of death which have come under Dr. R.'s notice during the last twenty-three years—the first happened in 1825—two only were females.

Concerning the treatment, Dr. R.'s remedies are few and simple. In all the infants there was derangement of the first passages; the digestive power was more or less impaired, and the motions were pale or otherwise discoloured, and of a fetid odour. To correct this, he gave rhubarb and mercury, with chalk, in small doses, and an occasional teaspoonful of castor oil. Leeches to the head he has rarely advised, unless when the complaint was complicated with convulsions; and even then only when there were drowsiness and heat of scalp. The diet was regulated with strictness, and Dr. R. is of opinion that a spare diet is of incomparably more importance than any articles of medicine.

Change of air (that is, change to a cool, bracing atmosphere), Dr. R. says, does good by soothing the nervous irritability, lessening the activity of the circulation, and producing sleep; while at the same time it invigorates the powers of digestion. The change of air acts beneficially much in the same manner as it does in hooping-cough, only it is more generally applicable in child-crowing, is attended with less risk, and is more speedily and certainly efficacious.

The plentiful use of cold water in the form of sponging, was rarely omitted night and morning. In the treatment of one severe and alarming case, in particular, this was found of service, added to atmospheric exposure, as a means of allaying a remarkable degree of irritability.

Inflamed gums were scarified, and the operation repeated on a return of pain and heat, perhaps every second or third day. A sabre-pointed, rather blunt penknife, was the instrument preferred. In order to its safe performance, there is a precaution worth mentioning: though a trifle, it is not to be altogether despised. An infant under the disease is irritable, apt to cry vehemently, and so to bring on a spasm. There would seem to be an unnatural accumulation of irritability, which, when the child is suddenly provoked, is nearly certain to bring on crowing. Let the operator proceed at once to pull back the head, and deliberately scarify the gum, and the almost certain consequence will be either a fit of spasm or a convulsion. In one case, Dr. R. had nearly caused a fatal spasm by scarifying the gums, without first making the child *slowly* expend its irritability in free crying. The precaution referred to, consists in gently drawing back the head, and that is sure to produce crying; then letting alone for a little, and again repeating the feint, until there has been free sonorous crying. Now, the excess of irritability being expended, scarification can be safely performed.

The same precaution is applicable in forcibly administering medicine by the spoon. A sudden, incautious attempt to give medicine in one case, produced a convulsion.

---

24. *Coffee, as a Cure for Hooping-Cough.*—Various medicines have from time to time been brought forward as specifics in hooping-cough; and some of them we have tried. To quinine, salicine, arsenic, and oxide of silver, we have given a fair trial in a considerable number of cases: and the result of this experience is, our belief that all of them, except the last named, possess some power in checking the disease, when it has gone on for some time, and is marked by periodicity. When the hour of the recurrence of the fits comes to be accurately foretold, all of the above-named drugs given in full doses in anticipation of the attack, postpone, or entirely prevent it. In the early stages, or later, where there is some amount of bronchitis, the free use of stimulating embrocations, with occasional expectorants, and stomachics, and alteratives (such as a powder composed of cusparia, trisnitrate of bismuth, and rhubarb), are the means we trust to. When the cough assumes a distinctly periodic character, we recom-

mend a trial of antiperiodic remedies and change of air, both of which measures, in many cases, prove of signal and speedy benefit.

From Pereira's summary of the therapeutic uses of coffee, it is not unlikely, however, to exercise some control in hooping-cough. "It has," says Pereira, "been employed as a febrifuge in intermittents; as a stomachic, in some forms of dyspepsia; as an astringent, in diarrhœa; and as a stimulant to the cerebro-spinal system in some nervous disorders." Floyer, Dr. Percival, and others, have used it in spasmodic asthma; and Laennec says: "I have seen several cases in which coffee was really useful." *Pereira*, vol. ii. ed. 1842, p. 1441.

The recommendation of coffee, in hooping-cough, seems decidedly to merit attention. Dr. Jules Guyot, who advocates the use of the remedy, writes thus, in the *Union Médicale*, for 24th April, 1849: "*Café à l'eau*, hot, and well sugared, in suitable doses, taken four times, or oftener, daily, will cure, in from two to four days, the most obstinate cases. For a child of two years, the dose is a teaspoonful; for a child of four years, a dessertspoonful; and for an elder patient, a tablespoonful. To obtain a rapid and permanent cure, it is necessary to conjoin with the coffee treatment, a diet of fried and roast meat, taking care to mince it, if the child cannot masticate it sufficiently. The quantity of milk used ought to be diminished; and farinaceous food, confectioneries, and fruits, must be entirely prohibited."

The alleged specific power of coffee in hooping-cough, was accidentally discovered by observing the following case:—

A child, of four years old, under rigid dietetic treatment for measles, was seized with congestion of the lungs, against which energetic antiphlogistic treatment was put in force. When Dr. Guyot was called in, death seemed imminent from violent paroxysms of cough, which induced such alarming suffocation and syncope, as to cause the patient to appear to be actually dead. Some spoonfuls of strong beef-tea, with some spoonfuls of sweet and hot infusion of the lime-tree, were prescribed. The child passed the night without fainting. On the following day, the same infusions were continued, and in addition, there was given a little bit of grilled and finely minced mutton, with the view of restoring strength as rapidly as possible; but a severe fit of coughing came on, which terminating in vomiting, caused ejection of the food: recourse was again had to the beef-tea, which provoked a similar fit of coughing, and was ejected. In these circumstances, with death apparently impending, a teaspoonful of coffee was given after each teaspoonful of beef-tea. Not only was the beef-tea retained; but, to my great surprise, the cough likewise ceased. Two hours afterwards, the child took with relish a little bit of hashed cutlet, followed by a teaspoonful of the coffee: the food was not ejected, digestion went on naturally, the night was passed in comfortable sleep, there was no more cough: and, in truth, the child was saved. On the following day, the treatment was continued, and there was a continuance of a like satisfactory state. On the third day, however, the relations omitted the coffee, when the cough returned, after the first meal, with all the characteristic violence of well-formed hooping-cough; and this state continued during the day. On the fourth day, when the coffee was resumed, the cough disappeared. During forty-seven days the coffee was persisted in, when the cure was distinctly complete.

The case was furnishing subject of serious reflection, when Dr. Guyot met, in a public conveyance, M. Bouju, ex-notary of Franconville: he told him that he had been obliged to have double doors for his study, to keep out the terrible and incessant noise caused by his two children with hooping-cough. Dr. Guyot detailed the case above narrated; and he cured both his children in four days by means of coffee. He has since tried the remedy successfully in above sixty cases. The efficacy of coffee, in hooping-cough, seems to show that the seat of the disease is not in the bronchial tubes or larynx—nor in their vascular or nervous network—but exclusively in the digestive organs, and especially in the pharynx and stomach. The cough and convulsive movements of the larynx are excited by a pruriginous irritation of the pharynx; which, again, probably depends on some special affection of the stomach."—*Lond. Journ. of Med.*, Aug., 1849.

25. *On Intermittent Fever in Young Children.* By M. Valleix.—On looking over those authors who have treated, either in separate works, or in notices in Medical Journals, of intermittent fevers in young children, and children still at the breast, we are astonished at the paucity of our knowledge on this subject. In a paper published in the *Union Médicale*, of January 1848, entitled *De La Fièvre Intermittente chez Les Jeuns Enfans, &c.*, and which is of much higher value than all that had preceded it on the same subject, the author, Dr. Ebrard, of Bourg, comments on the silence of medical writers in respect to this question; stating that M. Bouchut is almost the only one who has furnished some remarks on this disease, based on the result of the cases which had fallen under his notice. In general, those French authors who have written on the disease in young children, have pursued their investigations at Paris, where they have rarely had the opportunity of seeing intermittent fever in children, and they have therefore very generally regarded the disease as a complication of hooping-cough.

The most surprising of all is, however, the negligence evinced in this respect by writers who have treated specially of intermittent fever, and who, from their acquaintance with the disease in the countries and districts where it is endemic, must necessarily have had ample opportunities of observing it in young children. But even here we find nothing beyond a few general considerations on the transmission of the fever from the mother or nurse to the child, and at most a few vague directions regarding the treatment of the disease in young children. Yet the more we reflect on the subject, the more clearly do we recognize the extreme importance of acquiring a correct knowledge of intermittent fever, especially when occurring in infants at the breast, for it appears highly probable that a number of young children sink rapidly under this disease, before its existence had been suspected by the physician.

I have not myself had an opportunity of observing intermittent fever in children at the breast. I subjoin a case which M. Louis has communicated to me, and that I purpose making the basis of some observations regarding the diagnosis and mode of treatment of the disease at that early age.

1. The subject of this case was a boy aged five months. He was a well-grown child, rather pale than otherwise. The mother, who suckled him, had never had intermittent fever; his health had been good up to the time of the attack. In the beginning of the month of July, the child was taken to Havre, where he remained a week, during the whole of which time the weather was fine, and he was not exposed to any apparent cause of fever.

On the 11th of July, the evening before his removal from Havre, he had a well-marked attack of fever, viz., alternation of shivering and heat, succeeded by perspiration: the following day there were no traces of fever; the child manifesting the symptoms of health, and all the functions being in a normal condition.

On the 13th, the attack recurred while the child was on the journey to Paris. On the 14th, M. Louis first saw him, and found the child lively and in apparent health. An occasional alteration in the tones of the voice, and a slight and occasional cough, being the only symptoms observed. Auscultation and percussion indicated nothing abnormal. On the evening of the 15th, the third attack occurred, and was marked by a fit of shivering which continued half an hour, and was succeeded by heat and moisture. Examination of the region of the spleen showed that the latter did not extend beyond the ribs. The mother was ordered to take three pills of sulphate of quinine, of two and a half grains each, and on the following day to increase the dose to four pills.

On the 16th, the attack recurred four hours in advance, and was less long and less violent than the preceding one. From the 16th to the 21st, five pills, of two and a half grains of sulphate of quinine, were given daily. The fever retained its tertian form, and the attacks were well marked, but while they recurred four to five hours in advance, they at the same time diminished in intensity. On the 21st, there were two attacks, separated by an interval of complete apyrexia. (The same treatment continued.) From the 22d to the 27th, the fever assumed the quotidian form—the attacks were well marked, and the intervals quite free from symptoms of fever. On the 22d, the child was removed into the country, to an elevated and healthy district, about twelve miles from Paris, and from that day the mother discontinued taking the sulphate of quinine. On the 27th, M. Louis found the child free from fever, the skin cool, the flesh firm; but the face of a straw-coloured hue, but no abnormal coloration in the sclerotic. The spleen extended beyond the ribs four finger breadths. The mother was ordered to resume the pills, and to rub the child with an ointment containing one-tenth of sulphate of quinine. Two and a half ounces of this ointment were to be used in the course of the day, that is to say, about fifteen grains of the salt.

The two next attacks were respectively much less violent than the preceding. (The ointment was continued morning and evening, and an injection ordered, containing one grain of sulphate of quinine with half a drop of laudanum.)

The child retained *some* of the injection, and two days after its first administration the fever ceased entirely. The treatment was continued six days after the last attack.

This case appears to me to present many points of interest. In the first place, we have intermittent fever in the child without the disease being transmitted from the nursing mother; and here the question arises, If the fever were produced by a sojourn on the seashore, why should the mother escape, and the child alone be attacked, at an age when it would appear, from the evidence of most writers on intermittent fever, that the disease is less common than in more advanced life? In fact, after considering the case, we are led to conclude, that intermittent fever may occur in children at the breast, as well as in adults, without any appreciable cause. The symptoms presented in M. Louis' patient differ in no way from those ordinarily observed. The cold stage never lasted more than half an hour. The spleen did not extend beyond the ribs, until after many fits. M. Ebrard has found, in all cases in which he was able to make a satisfactory examination, that the spleen extended below the ribs after the fourth fit. But may not the augmentation of volume have been so inconsiderable at first as to prevent its detection below the false ribs? Percussion presents the only satisfactory means of deciding this point; and I do not believe that it would be attended by as great a difficulty in the case of young children as is generally supposed; for as the walls are very thin at this early age, the differences of sound will be proportionally well marked. The course of the disease seems alone to have presented some peculiarities; for here we have a well-marked tertian converted into a quotidian form of fever, after the occurrence of two fits in one day, separated by an interval of perfect apyrexia.

The most interesting point in the whole case, is the mode of treatment adopted; for, although there is no novelty in giving to the nurse the specific of the disease from which a child at the breast is suffering, it is not common to adopt such a course where the nurse is herself well. The effect of the sulphate of quinine on the child, in this case, is very evident, and no less remarkable is the simultaneity of the advance of the attacks, and the diminution of their intensity. Are we to attribute this effect to the action of the sulphate of quinine? The question does not admit of a definite reply; but there is a probability of such being the case, from the fact of the change having succeeded immediately on the administration of the medicine. It must, however, be observed, that this indirect treatment was only attended by an imperfect result; and it was not until after the child had been removed to a purer and clearer air, and frictions of sulphate of quinine had been combined with the treatment adopted for the mother, that a cure was effected. Although I have some doubts regarding the amount of benefit derived from frictions, I do not agree with M. Ebrard, in considering that they are indicated only in particular cases, but am disposed to believe that their effect is decidedly beneficial, when they are applied of a strength proportionate to the age of the patient. The question of the administration of this febrifuge as an injection for children at the breast is one of great importance, owing to the difficulty of administering quinine to children by the mouth. M. Ebrard objects to these injections, on the score that they cannot be long retained in the intestines; and, although this is undoubtedly true to a certain extent, the case before us seems to prove that they can be tolerated sufficiently long to produce some beneficial result, and I therefore think that the attempt to administer them should never be neglected. Besides these means, and the administration of the medicine by the mouth, intermittent fever may be reduced in young children by the employment of baths of cinchona, &c. M. Ebrard recommends the administration of sulphate of quinine in an infusion of coffee; but we should certainly feel some hesitation in giving an infant at the breast the quantity (one drachm) that he recommends for the purpose; and before we would venture on such a course we must receive some further evidence regarding the efficacy of a means which, it must be confessed, would more fully than any other substance conceal the bitter taste of the medicine.

The difficulties attending the treatment of the intermittent fever in children of a more advanced age are even greater than those presented in the case of infants at the breast; for when the child is old enough to recognize the taste of the quinine, under whatever form it may be disguised, the mode of treatment is attended by very great embarrassment.

M. Ebrard has observed in a certain number of cases that intermittent fever is often accompanied by more or less violent convulsions. The most treacherous form is, however, that in which convulsions constitute the sole character of the fits, and here it is of the utmost importance to ascertain whether there is a regular intermission in their occurrence, since, if such be the case, the treatment is plain.—*Monthly Retrospect*, April 1849, *from L'Union Méd.*, Nos. 120, 121.

---

26. *Melœna in Children.*—M. Rilliet, one of the authors of the classical work on the "*Diseases of Children,*" takes the occasion of two cases of intestinal hemorrhage in children, which have come under his notice, to furnish a summary of what is known upon the subject. The cases he relates are unique, inasmuch as they are examples of this rare disease occurring in twins. The first child, though not large, was well formed, and had cried strongly after birth. The meconium had been discharged by castor oil; the child had sucked, and seemed in all respects doing well, when several hours after birth it passed two or three stools wholly composed of blood, and became deathly pale and cold, and was unable to swallow. It cried, but there was no vomiting or convulsion. Cold compresses were applied to the abdomen, the warmth of the extremities being maintained; rhatany was employed, both in injections and external applications, but the former being always returned with blood, the latter were alone continued. The child gradually rallied after six bloody stools had been passed. While this child yet continued in an alarming state, the other twin was seized with vomiting and purging of blood, and decoction of rhatany was in the same way applied to its belly. It recovered, though the bleeding continued more obstinate. Both children remained well, though long continuing exceedingly pale.

Different authors have ascribed the affection to various causes, but an analysis of the published cases leads Dr. Rilliet to doubt the efficacy of most of those assigned, e. g., the condition of the health of the parents, the nature of the labour, the too early division of the funis, the weakness or plethoric state of the child, the presence of irritating matters in the intestines, external violence, or the rupture of vessels; and although the affection usually occurs at from the first to the fourth day, it has been met with as late as the sixth, eleventh, or twentieth, boys seeming more liable to it than girls. Dr. Rahn-Escher, of Zurich, believes that much depends upon hereditary influence, a diseased state of the digestive organs being communicated from parent to child. This view would seem to be best supported in those cases where the parents also suffer from hemorrhages, or where several of their children do so simultaneously or successively. Billard states that the majority of fifteen children dying from it, were remarkable for plethora, but the experience of others does not bear out this view. Numerous pathological observers agree in stating that there is no important vascular lesion, the mucous membrane being sometimes not more injected than natural; others have found the abdominal veins gorged with blood, and the mucous membrane softened and reddened. The naturally injected state of the intestinal tube in the child may act as a predisposing cause when there is atony of its vessels, or obstruction to the abdominal circulation.

The difficulty with which respiration is established at birth, especially if the lung is incompletely dilated, may exert an influence.

The bleeding in most cases has followed the meconium, but unpreceded by any premonitory symptom. It is usually abundant and frequent, rich in colour, and either fluid, or in part coagulated. Hæmatemesis, though more rare, may yet be abundant; and Etlinger gives a case in which a pound of blood was discharged by vomiting and stool. Sometimes the hæmatemesis is more abundant than the intestinal hemorrhage, but it is always accompanied by the latter. The hemorrhage may attain its maximum in twenty-four hours; but it may be prolonged to the third or fifth day, and in very rare cases to the tenth even.

Of 23 cases in which the issues have been recorded, 12 recovered and 11 died. In 9 of the twelve recovery seemed complete, but in 3 the constitution was deteriorated. In treating the disease, sometimes mere demulcents, at others astringents, the mineral acids, and the internal use of cold, and in others applications to the belly and enemata, have been tried in different cases. M. Rilliet believes that the best treatment consists in the free exposure of the child to the air, the keeping its extremities warm at the same time, the application of astringents to the abdomen, and the careful administration of nourishment, or, if the child's condition requires it, of stimuli.—*Brit. and For. Med.-Chirurg. Rev.*, July, 1849, from *Gazette Médicale*, 1848, No. 53.

---

27. *On Cephalæmatoma.*—M. Chassaignac believes that whatever operation is performed for the relief of this affection, it proves very hazardous to the infant, and he takes the occasion of a recently occurring case, which he watched closely during life, and examined after death (from other causes), for drawing attention to the remarkable activity of the absorbent power at this age, and to the mode in which Nature thus operates a spontaneous cure. The sanguineous effusion gradually becomes encysted, though for a few days the blood is in direct contact with the bone and periosteum; an organic membrane separated into two layers, and which afterwards takes on all the characters of periosteum, then surrounds it, and the absorption proceeds. In proportion as the quantity of effusion diminishes, the osseous rim or border which surrounds it also diminishes in diameter, by reason of a double simultaneous action, viz., resorption at its external circumference, and a concentrical reproduction at the inner one. Very voluminous tumours in this way disappear; and so great is his fear of exciting suppuration in them, that M. Chassaignac strongly advises all interference to be withheld, save in the extremest cases.

M. Debout agrees with M. Chassaignac, that in the great majority of cases absorption will take place during the first six weeks of life; but after this period, sometimes a serous cyst is formed, containing a reddish fluid, very like that found in mammary cysts the results of contusions. This cyst generally inflames and suppurates, giving rise to necrosis and fever, which may be prevented by opening the cyst. This operation, however, may be followed by erysipelas, or the formation of abscess, and M. Trousseau's procedure offers the greatest security against these accidents. With a narrow bistoury, so held as to cut from within outwards, he makes a puncture at the lower part of the tumour, and endeavours by pressure to empty it of its entire contents, and then applies strips of diachylon and a bandage, so as entirely to exclude the access of air. In eight or ten days these are removed, and all is found to be doing well.—*Bulletin de Thérapeutique*, t. xxxv. pp. 448—55.

Dr. Vogler, writing upon this subject, observes, that he is an example of how careful medical men should be in drawing general deductions from even a quarter of a century's experience. Thus, a very short time since, he published a paper, in which he stated that, during this space of time, he had never had occasion to open a cephalæmatoma, having always succeeded in dispersing the tumour by lotions of sal ammoniac, alcohol, and water, in from three to six weeks. Yet since then has he, in the course of only one year, met with three cases in which he felt called upon to open the tumour. In the first case, he did so, because a severe ophthalmia, in a child but a fortnight old, forbade the use of wet applications. After the blood was discharged, suppuration was set up, but led to no bad consequences. The second case occurred in a child half a year old, apparently as a result of contusion. The swelling had all the appearance of a deep-seated abscess, but on an incision being made pure blood flowed out. A somewhat tedious suppuration followed, but all did well. In a third case (æt. 15 days), the swelling was very tense, and as the parent neglected applying the lotion, the author opened the tumour and discharged the blood. Very insignificant suppuration followed.—*Brit. and For. Med.-Chirurg. Rev.*, July 1849, from *Medicinische Zeitung*, 1849, No. 13.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL SURGERY.

28. *Repair of Fractured Bone.*—Mr. JAMES PAGET, in a recent course of lectures delivered at the Royal College of Surgeons, expresses his conviction that the description drawn by Dupuytren and others, from the examination of fractures in dogs, rabbits, birds, and other animals, cannot be applied without great deductions to the case of fractures in the human subject. True, he says, as the pictures are of the cases of the animals examined, they are exaggerations of the process in our own case. With a few exceptions, all that is written in these accounts of external and internal, provisional and definitive, callus, of the formations of cartilage and bone within the medullary tube and beneath the periosteum, can be traced only, as it were, in rudiment in the fractures of the human bones.

From an examination of a great many specimens, he is convinced that, in the ordinary repairs of simple fractures in the human subject, the reparative material, or callus, is merely inlaid between the several fragments: it fills up the interspaces between them and the angles at which one fragment overhangs another; but it does not encircle or ensheath them, in the manner implied in the description of provisional callus; nor is it in any considerable quantity, if at all, deposited either beneath the periosteum or within the medullary tube. In birds, dogs, and other ordinary subjects of experiments, the formation of a provisional, or, as it may, perhaps, be better called, an *ensheathing* callus, is usual. It is illustrated by numerous specimens on the table; yet even in animals it is not constant. To obtain what would be called good specimens of provisional callus, the injuries must be inflicted upon young animals; and among these I cannot but suspect that particular instances have been selected for description, —those in which less callus was formed, having been put aside as imperfect instances of repair, though, in truth, they may have displayed the more natural process.

For fractures in the human subject, the evidence that union is accomplished by the reparative material being placed between, not within and around, the fragments—*i.e.*, as an intermediate, not an ensheathing callus—this evidence may be obtained by the examinations of such fractures, even long after they are completely healed. In as many as you like to examine, you will find the new bone formed exclusively between the fragments. Whether they were in apposition, or nearly so, or wide apart, still there is no appearance of new bone being formed on the outer side of any fragment,—I mean on that side which is turned away from the other fragments. And this is the case even in those instances in which there is so much displacement of the fragments, and so much distortion, that we can hardly suppose the repair to have proceeded very quietly. Neither, in any of these, do you find new bone within the medullary tube. It may be objected by some to these specimens, that the fragments were once ensheathed and blocked up with callus, and that it has been since absorbed. But this is not probable, seeing that in many cases there remain, on the outer surfaces of the fragments, certain marks of their original form and slight irregularities. In one of the specimens which I present,* we have traces of the healing of a long fissure, which appears now as a sunken groove, making it nearly certain that no new bone was formed over it. In another, is a detached piece of the wall of a femur turned quite round, so that its periosteal surface lies on the periosteal surface of the principal fragment; yet, on the outer surface of this piece (which was the inner surface, its wall), the thin plates forming the boundary of the medullary tube are still unchanged.[*]

---

* Museum of St. Bartholomew's Hospital, ser. 3, C. 5.

But if any deem these, and the like characters, insufficient to prove the absence of ensheathing callus, and of callus extending into the medullary tube, yet recent specimens are not open to such doubts. I add, therefore, that (with the exceptions presently to be mentioned) in all the specimens of fracture that I have been able to examine, in the human subject, within six months of the time of the injury, there has been the same absence of provisional or ensheathing callus. The specimens here present are—a radius, four weeks after the fracture;[†] another, four or five weeks;[‡] a tibia, five weeks;[§] a femur, six weeks;[‖] another of the same date;[¶] a third, I should think, about eight or nine weeks;[**] a radius, of somewhat later date;[††] a tibia, eight weeks;[‡‡] a fibula, eleven weeks;[§§] a tibia, twelve weeks;[‖‖] and a tibia, sixteen weeks after the injury.[¶¶] Here are, also, others of various but unknown dates, all in process of apparently natural repair. All these were cases of simple fractures, and they include (with a few exceptions presently to be mentioned) all the specimens of such recent fractures, in the human subject, as are in the museums of the college and of St. Bartholomew's Hospital. The displacements and other conditions following the injury have been manifestly various; but all agree in this,—that the fragments are united by intermediately placed reparative substance, and that this, whether soft or osseous, in no case surrounds or ensheaths the fragments, or does more than just close in the medullary canal. When present in the largest quantity, it is only enough to smooth off the chief irregularities, and to fill up the interspaces and the angles or corners, between the fragments.

Such, then, appears to be the natural mode in which the reparative material is deposited for the union of fractures of human bones. And regarding the particular position which it may in each case occupy, I do not know that it can be more exactly described, than by saying, that it is deposited where it is most wanted for the strengthening of the bone,—so that, whatever would be the weak part of the bone, if unhealed, there is the new material placed, in quantity as well as in position just adapted to the exigencies of the case, and restoring, as much as may be, the original condition and capacities of the bone.

If now it be inquired why this difference should exist in the corresponding processes in man and other animals, I believe still, that it must be ascribed principally to the two causes already quoted from the catalogue—namely, the quietude in which fractures in our bones are maintained, and the naturally greater tendency to the production of new bone which animals always manifest. Even independently of surgery, in the case of fractures of the lower extremity, the human mode of progression almost compels a patient to take rest; and in fractures of the upper extremity, the circumstances of human life and society permit him to do so far more than other animals can. The whole process of repair is, therefore, more quietly conducted; and, as we may say, there is comparatively little need of the strength which the formation of provisional callus would give a broken limb.

The exceptions to the rule of difference in the repair of human bones, and those of animals, confirm it as thus explained; for the only bones in which, in the human subject, a provisional callus is generally or naturally formed, for the repair of fractures, are the ribs. In cases of fractured ribs one may see, indeed, a very close imitation of that which is described, from experiments on animals, as the ordinary mode of union. The provisional callus is well formed under the periosteum, and encircles, like a broad ring or ferrule, both the fragments, and may almost completely ossify before their union is accomplished, or even apparently begun.

---

[*] Museum of the College of Surgeons, No. 454.

[†] Museum of St. Bartholomew's Hospital, series iii. 94.

[‡] Ibid., 95.

[§] Ibid.

[‖] Ibid.

[¶] Museum of the College, No. 412—415.

[**] Museum of St. Bartholomew's, ser. iii. 103.

[††] Ibid., 78.

[‡‡] From Mr. Lonsdale's Museum.

[§§] Museum of St. Bartholomew's, ser. iii. 80.

[‖‖] Ibid., 67.

[¶¶] Museum of the College, No. 438, and of St. Bartholomew's, ser. iii. 113.

Another bone for the repair of which, but more rarely, callus is formed around the fragments, is the clavicle; and the best specimen in which I have here seen it is one* in which the fracture was not detected, and the fragments were allowed to move on one another, till the patient died, twelve weeks after the injury.

Except in such cases as these of fractures not kept at rest, I doubt whether a natural formation of callus beneath the periosteum, or within the medullary tube of a human bone, would ever occur. In disease, the occurrence is not so rare; for, when the natural process of union fails altogether, the loose ends of the bones may be inclosed within a case formed wholly or in part of bone; or an imitation of callus may be made by a gradual morbid accumulation of bone around a fracture, even after its natural union.† (St. B. H. C. 29.)

But I think the comparative restlessness of animals is not alone sufficient to account for all the difference in the processes. The remainder may be ascribed to their greater tendency, in all circumstances, to the formation of new bone. Not in fractures alone, but in necrosis this is shown. It is very rarely that such quantities of new bone are formed, even in children, as are commonly produced after necrosis of the shafts of bones in dogs or other animals; nor is there in the human subject, any such filling up of the cavities from which superficial sequestra have been separated, as the experiments of Mr. Hunter showed, after such exfoliations from the metatarsal bones of asses.‡

Other examples might be quoted; but these may suffice to show that, after injuries, new bone is formed more abundantly in animals than in man. And I hope enough has been said to prove that the generally received account of provisional callus, and other parts of the healing of fractures, is an exaggeration of what occurs in man. If it be asked, what it is that is felt like a callus after fractures, I would say that, in such cases as I could examine after death, I have usually found that the overlapping ends of the bone, being both at once grasped, had been taken for the enlargement of callus. Sometimes, also, the thickening and induration of the parts around the fracture infiltrated with serous and bloody fluid, or with lymph, have been mistaken for it.—*Lond. Med. Gaz.*, July 20, 1849.

---

29. *On the Processes of Repair and Reproduction after Injuries.*—Mr. James Paget, Professor of Anatomy and Surgery to the Royal College of Surgeons of England, in a recent course of lectures on the Processes of Repair and Reproduction after Injuries, makes the following observations on some of the relations which the reparative process bears to those of inflammation; and on the identity of the power exercised in the repair of injuries, and in the development of the germ.

"It is not," he remarks, "because we have any well-defined idea of inflammation that it is desirable to refer to it, as if it were a standard with which we might compare other organic processes; but because some idea of inflammation, however vague, mingles itself with nearly everything that is considered in surgical pathology. Nowhere is this more manifest than in what has been written in surgical works upon the methods of repair; concerning which the general impression seems still to be, that a process of inflammation forms part of the organic acts by which even the smallest instance of repair is accomplished.

"Now to judge whether, in any process of repair, an inflammation of the wounded part ensues, we have two kinds of evidence: namely, that which is derived from the presence or absence of the usually admitted signs of inflammation during life, and that which may be found in the presence or absence of inflammatory products, *i. e.*, exudation-cells, after death. Each of these has its advantages; but in experimental inquiries, the latter is by far the better evidence, and that which I have chiefly sought. Judging, however, as much as possible, from both these forms of evidence, the processes we have traced appear to warrant these general conclusions:—

---

* Museum of St. Bartholomew's, ser. iii. 92.

† Museum of St. Bartholomew's, iii. C. 29.—In the same museum (ser. iii. 65–66), is a humerus, with a quantity of bony callus accumulated round a fracture of its shaft. It was taken from a man who died some weeks after the fracture, and whose arm had, for a long time after the injury, been the seat of severe spasms. See Mr. Stanley's "*Illustrations of Diseases of Bones,*" pl. xxiii. fig. 3.

‡ Museum of the College, Nos. 641 to 656.

"1. That in the healing of a wound by immediate union, inflammation forms no necessary part of the process; rather, that its presence always hinders, and may completely prevent it. The healing by immediate union should be a simple rejoining of the severed parts, without the production of any new material; and in the same proportion as, in any case, inflammatory matter is effused, either in or between the wounded parts, in that proportion does the healing deviate from the true and best process of immediate union.

"2. For subcutaneous wounds and injuries, as in divided tendons, simple fractures, and the like, nearly the same may be said. Inflammation is excited by the local injury, but its products form no necessary part of the material of repair; rather, the more abundant they are, the more acute the inflammation is, and the longer it continues, the less speedy and the less perfect is the process of repair. For here, the necessary or best reparative material is a substance which, both in its origin and its development, declares its non-inflammatory nature; a substance which is produced without the signs of co-existent inflammation, and of which the development is different from that of the true inflammatory products. And this, which is most evident in the case of the healing of subcutaneous injuries by bonds of connection, is probably equally true in the case of subcutaneous granulations.

"But, 3dly. In the healing of a wound by primary adhesion, or by open granulations, we have evidence of a process of inflammation, not only in the presence of its ordinary signs in a degree generally proportioned to the severity and extent of the injury, but in the character and mode of development of the new materials that are formed for the repair. For these materials are, in all appearance, identical with those of such effusions of lymph as all are agreed to consider the effects of inflammation.

"Still, 4thly, in these cases we have evidences that the inflammatory process is necessary for no more than the production of the organizable matter,—and, in the case of granulations, for the production of only the first portions of it. The right formation of the cells, and, yet more evidently, their higher organization into cellular tissue and cartilage, ensue only while the signs of inflammation are absent. They are manifestly hindered or prevented when signs of inflammation are distinctly present, or when its existence may be suspected in consequence of the presence of some irritation, as a foreign body, dead bone, or the like. The continuance of suppuration during the process of healing is no proof of the continuance of inflammation, if the account that I have given of pus be true.

"In these modes of healing, therefore, we may conclude that inflammation is only partially, and at one period requisite; and that, in regard to its requisite degree, the least amount with which an effusion of lymph is possible, is that which is most favourable to repair.

"Lastly, for the process of healing by scabbing, the absence of inflammation appears to be essential: indeed, the liability of our own tissues to the inflammatory process, and to the continued effusion that it produces, appears to be that which prevents their injuries from being healed as easily and surely, by the scabbing process, as nearly all open wounds are in animals.

"Such may be regarded as the relations of the reparative process to that of inflammation, as it is commonly understood; but, I repeat, such a comparison can be made only for the sake of deference to the general state of opinion in matters of surgical pathology. In truth, we know less of inflammation than of the reparative process.

"But, admitting the share which inflammation has in the repair of injuries to be such as I have expressed, it appears necessary to consider next how such a process can be made to minister to repair;—what is the power that determines its results to be such, or of such a kind, as are required for the restoration of the perfection of the injured part? The mere act of inflammation in a part would not heal its wounds; it would only produce a material which might be developed into cellular tissue and cuticle, and in which blood-vessels might be formed. Some other power must inform the course of the inflammation, and determine its result towards the healing of the wound. And so with all the other special acts of which each process of repair consists; whether we assume the operation of an assimilative force, or detect germs of tissues, or productive cells, which we may regard as centres of power,—still we must admit, I think, that the reparative process is determined in every act according to the same law, and by the same powers, as those which actuated the development of the germ. For in the repairs of even the highest animals we may discern all those features which I enumerated as characteristic of the power of the germ, and as distinguishing it from any force of assimilation, or any other force assumed in the explanations of the maintenance of the body by nutrition.

"Thus, 1st, the material for the repair of an injury is constructed according to no present model, such as is assumed for the hypothesis of assimilative force: it is developed from no tissue germ left by the damaged part for the construction of its successor.

"In the repair of a divided tendon, the whole length of the connecting bond is developed equally; or, if there be a difference, it is that the mid-space is in advance of the rest. No assimilative force in the ends of the original tendon can be imagined thus equally diffused, nor could germs for the growth of tendon have been strewn along the space left by the retraction. So, in the repair of fractures, the new bone is commonly formed first in contact with the original shaft, as if it were an out-growth from it: and here the assimilative force may have effect: but it is also often formed in detached parts, even outside the periosteum, at such distance from the old bone, and with such intervening tissue, that no act of an assimilative force can be reasonably imagined sufficient for the result.

"What, then, can determine such a reconstruction of parts as this? Surely nothing but such a power as that which determined their original construction from the germ.

"The identity of the power is, in the second place, manifested by its mode of operation. Whatever be the structure to be reproduced, it is constructed through the same stages as were traversed in its first development. Witness the cases that I have referred to: in the two modes of development of fibro-cellular tissue for repair, both equally imitations of a natural development—in the two modes for the production of new bone, both alike repetitions of the natural development of bone—in the mode of development of vascular loops, and of the walls of the blood-vessels. So, that, various as are the conditions in which we watch the process of repair, and various as the degrees of its perfection, yet is there no real variety of plan—no deviation from conformity with the law, according to which the new structures are developed in the germ.

"Observe, 3dly, how, as in the germ, many independent developments concur to the attainment of the end. In the several layers of granulation cells, while one portion are forming themselves to cellular tissue, another are constructing cuticle, and others are permiting and concurring in the progress of new blood-vessels. Or, in a wound involving many different tissues, we may discern the material that unites each of them, gradually assuming more of the characters of that which it unites, or that its position needs.

"4thly. The limits by which the reparative process is bounded are the same as those to which the development of the germ was confined. Great as the activity of the process may be in some instances, yet does it never achieve more than the power of the germ did. Trembley's hydra multiplied by mutilation fifty-fold: but the force thus manifested could not have been made to develop that hydra into any higher specific form, nor even, by expenditure in growth, to have formed from it a hydra of fifty times the usual dimensions. And so, in the repair of higher organisms, we find perfect tendon, perfect bone, perfect nerve, and of these just so much as is needed to restore perfection; but, except in disease, the reparative process never, in either the quantity or the quality of that which it produces, goes beyond the point to which the germ-power had developed the same part.

"Lastly, the acts of the reparative process are in conformity with the conditions and the gradually-changing modes of action of the germ which we observe in advancing years. A part which is injured in the child, is repaired with tissue proper to the childish state; the same part injured in the old man, is repaired with some lower tissue, or with tissue like that which is natural to age.

"Whether, then, we regard the exact details of the method according to which the reparative process is accomplished, or the end that it achieves, or the limits within which both its methods and its ends are confined, we see alike the evidences that the power that actuates it is the same as that which actuated the development of the germ. In every impregnated germ, we must admit that properties are implanted, which, in favourable conditions, issue in the power to form, of the germ and the materials it appropriates, a being like those from which it sprang. And mysterious as it may seem, yet must we conclude that a measure of those properties is communicated to all the organic materials that come within the influence of the germ; so that they, being previously indifferent, form themselves in accordance with the same specific law as that to which the original materials of the germ are subject. So, through every period of life, the same properties transmitted and diffused through the whole organism, are manifested in the determination of its growth and maintenance, in its natural degeneration, and its repair of every part, in accordance with that type or law which has prevailed in every individual of the species.

"Thus the constancy of both the method and the end of the reparative process may confirm us in the belief of the essentiality, we may almost say the immutability, of specific characters. For it shows that with each of all the countless varieties of visible form and structure, which mark the specific characters of living beings, there correspond peculiar internal properties of its constituent matter; properties which are capable of transmission and communication to all that can be incorporated in the living body, and of accumulation in the form of germs; and which, in any way thus transmitted, can manifest themselves in the unchanging power of constructing and composing matter according to the one determined and specific type.

"Thus, by watching the life of any being, in all the varieties of external circumstance and accident, and by seeing that, whatever be the deviation from its perfection into which, by the force of these, it is for a time compelled, it yet reverts to the same specific form; or, if it fall short of it, assumes no lower one: by watching such a life, we discern an image of the constancy of the law of specific characters; we gain an assurance that matter was not, and is not now, cast without design into the world, to be shaped by the force of chance and circumstance, and to be raised or degraded by their various ebb and flow; that the living occupants of the world have been fashioned and adapted for it, not by it; and that each was from the first endowed with properties that might descend unchanged from one generation to another, and in their immutability might be a symbol of Him who at the first created them, and by whose unchanging will and power they have been ever since maintained and still subsist."—*Lond. Med. Gaz.*, July 27, 1849.

—

30. *Difference between Subcutaneous Injuries and those open to the Air.* By James Paget, Esq.—Recent improvements in surgery have shown how right Mr. Hunter was, when, in the very beginning of his discussion concerning the healing of injuries, he points out, as a fundamental principle, the difference between those two forms of injuries of which one is subcutaneous, the other open to the air. He says: "The injuries done to sound parts I shall divide into two sorts, according to the effects of the accident. The *first* kind consists of those in which the injured parts do not communicate externally, as concussions of the whole body, or of particular parts, strains, bruises, and simple fractures, which form a large division. The *second* consists of those which have an external communication, comprehending wounds of all kinds, and compound fractures."* And then, he says, "The injuries of the first division, in which the parts do not communicate externally, seldom inflame; while those of the second commonly both inflame and suppurate."

---

* Works, vol. iii. p. 240.

In these sentences, Mr. Hunter has embodied the principle on which is founded the whole practice of subcutaneous surgery; a principle of which, indeed, it seems hardly possible to exaggerate the importance. For, of the two injuries inflicted in a wound, the mechanical disturbance of the parts, and the exposure to the air of those that were covered, the exposure, if continued, is the worse. Both are apt to excite inflammation; but the exposure excites it most certainly, and in the worse form; *i. e.* in the form which most delays the process of repair, and which is most apt to endanger life. Abundant instances of this are shown in the difference between a simple and a compound fracture, though the former may have been produced by the greater violence; or, between a single fracture, even with much violence, extending into a joint, and an open wound, never so gently made into one. Or, for parallel instances, one may cite the rarity of suppurations after even extensive ecchymoses, and their general occurrence when wounds are left open.

I have lately had frequent occasion to observe these differences, in a series of experiments made for the illustration of the healing of divided muscles and tendons. Some of these were divided through open wounds, and some by subcutaneous section; and the present specimens afford a fair example of the difference of results that often ensued. In the same rabbit, the tibialis anticus and extensor longus digitorum were divided on the right side with a section through the skin; on the left with a subcutaneous section, through a small opening. Twelve days afterwards the rabbit was killed. The wound on the left side is shown well repaired, and with comparatively little trace of inflammation; the gap on the right is closed in with a scab, and an imperfect scar, but under these is a large collection of matter, and no trace of a reparative process. The contrast is the stronger, because in all these cases there is, unavoidably, more mechanical violence inflicted in the gradual subcutaneous division than in the simple open wound. And, it must be added, that a speedy closure of the external wound made in an open section may bring the case into more favourable conditions, than those of a subcutaneous wound made with more violence. This, also, I saw in some of the experiments: a clumsy subcutaneous division of one of Achilles-tendon excited great inflammation about it; while the open section of the other tendon in the same rabbit was quickly and well repaired, because the external wound had been speedily united, and had sufficiently soon converted the open into a subcutaneous injury.

Still, what Mr. Hunter said is true: subcutaneous wounds seldom inflame; open wounds generally both inflame and suppurate. It will be a principal object of this lecture to show something like an anatomical reason for this difference, in the fact that the materials produced for the repair of open wounds are not the same, or, at least, do not develop themselves in the same manner, as those for the repair of closed or subcutaneous ones.—*Lectures on the Processes of Repair and Reproduction after Injuries.—Lond. Med. Gaz.*, June, 1849.

---

31. *Modes of Healing of Open Wounds.* By James Paget, Esq.—The healing of open wounds may be accomplished by five different modes—namely, 1. By immediate union; 2. By primary adhesion; 3. By granulations; 4. By secondary adhesions, or the union of granulations; 5. By healing under a scab. The repair of subcutaneous wounds may be effected by immediate union, but is generally accomplished by connection, or the formation of bonds of union between the divided and retracted parts. Very rarely it is effected by means of granulations without suppuration. Of these modes, which I hope to describe hereafter in detail, it is the peculiarity of the first, or process of immediate union, that it is accomplished by the mere re-union or rejoining of the divided parts, without the production or interposition of any new material. In all the others, new material is produced and organized. This process of immediate union corresponds with what Mr. Hunter called "union by the first intention." It is not the same as that which, in modern surgery, is called union by the first intention; for that is the same as Mr. Hunter named "union by adhesion," or "by the adhesive inflammation;" and is effected, as he described it, by the organization of lymph interposed between two closely approximated wounded surfaces. Mr. Hunter maintained that, union by the first inten-

tion is effected by means of the fibrine of the blood extravasated between the surfaces of the injured part, which fibrine, there coagulating, adheres to both the surfaces, becomes organized, and forms a vascular bond of union between them.* Doubtless, Mr. Hunter was, in this, in error; but, as the blood extravasated in wounds is not without influence on their repair, I will endeavour to state the several modes in which it may, when thus effused, be finally disposed of.

In my last course of lectures, I stated the evidences for believing that masses of effused, or stagnant and coagulated blood may be organized; *i. e.* may assume the characters of a tissue, and may coalesce with the adjacent parts and become vascular. Among these evidences, several cases were mentioned in which such organization of blood had been distinctly traced; they included cases of blood effused in serous sacs, especially in the arachnoid, clots in veins organizing into fibrous cords, or, after less organization, degenerating into phlebolithes, clots organizing into tumours in the heart and arteries, and the clots so organized above ligatures on arteries as to form part of the fibrous cord, by which the obliterated artery is replaced. These last cases afforded the most conclusive evidence, because they had been very carefully investigated in a series of experiments and microscopic observations, by Dr. Zwicky.† In the course of last year, I had the opportunity of examining a specimen which, more fully than any other I had seen, confirmed his account of the mode in which blood-clots become organized. It supplied, too, some facts which appear to me important to the present subject.

The specimen was obtained from an insane person, by my friend Mr. Holmes Coote. A thin layer of pale blood-coloured and ruddy membrane lined the whole internal surface of the cerebral dura mater, and adhered close to it. Its colour, the existence of patches of blood-clot imbedded in it, and all its other characters, satisfactorily proved that it had been a thin clot of blood—an example of such as are effused in apoplexy of the cerebral membranes, of such as Mr. Prescott Hewett has so fully described in his paper in the Medico-Chirurgical Transactions. Numerous small vessels could be seen passing from the dura mater into this clot-membrane, and with the microscope, while they were still full of blood, I made a sketch from which the diagram was copied. The arrangement of blood-vessels bears a close resemblance, but, perhaps, more in its irregularity than in any positive characters or plan, to that which exists in false membrane formed of organized lymph: but the vessels were, I think, generally larger.

Such were the blood-vessels of this organized clot. Its minute structure showed characters which are of peculiar interest, because of their resemblance to those observed in the material that is commonly formed in the repair of subcutaneous injuries. In the substance of what else appeared like a filamentous clot of fibrine, sprinkled over with minute molecules, the addition of acetic acid brought into view corpuscles like nuclei, or cytoblasts, very elongated, attenuated, and, in some instances, like short strips of flat fibre. Of course, such corpuscles are not to be found in any ordinary clot of fibrine; neither are they seen in any stage of the organization of such lymph as is commonly effused in inflammation; but they exactly resemble such as may be found in certain examples of rudimental cellular tissue, and (among these) in the material for the repair of subcutaneous injuries. In short, the minute structure of this clot now organized, was an example of what I shall have often to refer to under the name of "nucleated blastema."

With such evidence as this of the organization of a thin layer of blood-clot, and of the development of its fibrine being apparently identical with that of the material commonly formed for the repair of subcutaneous injuries, it was with much surprise that I found that extravasated blood can, commonly, have no share at all in the repair of injuries.

One of the best proofs of this is, that scarcely the smallest portion of blood is effused in the cases in which the largest quantity of reparative material is produced in the shortest time, and in which the healing process was most perfectly accomplished. In twenty cases in which I have lately divided the Achilles tendon in rabbits, I have only once found, in the subsequent examinations, a clot of extravasated blood in the track of the wound. In this case, I believe, the posterior tibial artery was wounded; for in all others, and in similar divisions of muscles, unless a large arterial trunk, such as the anterior tibial, were cut, the only effusion of blood was in little blotches, not in separate clots, but effused or infiltrated in the cellular tissue near the wound. In some cases there was blood-stained infiltration of the inflammatory products, but in none were there such clots as could be organized into bonds of union. In short, parts thus divided scarcely bleed: what blood does flow escapes easily through the outer wound, as the surrounding tissues collapse into the space left by the retracting parts; or, what remains is infiltrated into the tissues, and forms no separate clot.

---

* Works, vol. iii. p. 253.

† Ueber die Thrombus; Zurich, 1846.

It is the same with fractures. In a large proportion of these, one finds no clots lying between the fragments where they are to be united, and only very small spottings of blood, like ecchymoses, in or beneath the periosteum. The abundant extravasations that commonly exist in the subcutaneous tissue are generally confined to it: they are not continued down to the periosteum or bone.

In all these cases, then, we have sufficient proof that extravasated blood is not necessary for union by the first intention, or for any other mode of repair, in the simple fact that where the repair is best, and the material for it most ample, no blood is so extravasated as to form a clot that could be organized.

But, though this may be the usual case, the question still remains—When blood is effused between wounded surfaces, and clots there, how are the clots disposed of? For often, though not generally, such clots are found in wounds, or between the ends of a broken bone, or a divided tendon when an artery by its side is cut; and in most operation-wounds, one sees blood left on them, or flowing on their surfaces, after they are done up. How, then, is this blood disposed of?

If effused in large quantity, so as to form a voluminous clot, and especially if so effused in a wound which is not perfectly excluded from the air, or if effused in even a subcutaneous injury in a person whose health is not good, it is most likely to excite inflammation; and the swelling of the wounded parts, or their commencing suppuration, will push it out of the wound. Thus we often see blood ejected.

But in more favourable circumstances it may be absorbed; and this may happen whether it have formed separate clots, or, more readily, when it is infiltrated in the tissues. What I have seen, however, in the experiments to which I have already referred, leads me to dissent from the account commonly given of the absorption of blood thus effused. The expressions generally used imply that the first thing towards the repair of such a wound is the absorption of the extravasated blood; and that then, in its place, the lymph or reparative material is effused. But this can hardly be the case; for the absorption of blood is a very slow process, and commonly requires as much time as would suffice for the complete healing of a wound, or even of a fracture. Not to mention the very slow absorption of the extravasations of blood in apoplexy, or in serous sacs, I have found the blood effused in the subcutaneous tissue, and the muscles scarcely changed at the end of five weeks after a simple fracture; that in a tied artery as little changed after seven weeks; and even in common leech-bites we may sometimes find the blood-corpuscles in little ecchymoses unchanged a month after their extravasation: yet in much less time than this it is commonly implied that all the blood extravasated in an injury is cleared quite away, that lymph may occupy its place. My impression is, that this opinion rests on imperfect observations. Blood is supposed to be effused in all subcutaneous injuries; and where it is not found, it is supposed to have been absorbed; the truth, rather, being that, where no blood appears, none ever was.

The true method of the absorption of blood seems to be, that it is enclosed within the effused reparative material, and absorbed by the vessels of that material as its organization proceeds. The best instance in support of this, that I have seen, was in the case of an Achilles tendon divided subcutaneously six days before death. The reparative process had proceeded favourably, and as strong a band of union as is usual at that period was formed of the new reparative material effused between the retracted ends. On slitting open this band, I found within it a clot of blood, such as must have come from a large vessel; and this clot was completely enclosed within the new material, not closely adherent to it, nor changed, as if towards organization, but rather decolorized, mottled, and so altered as clots are in apoplexy before absorption.

I believe that this case only showed in a very marked manner what usually happens with blood thus effused and not ejected; for it is quite common, after the division of tendons, to find new reparative material, if not containing distinct clots, yet blotched with the blood that was infiltrated in the tissue in which the reparative material is deposited: and even when the repair of a fracture was nearly perfect, I have still found traces of blood-corpuscles enclosed in the reparative material, and degenerating, as if in preparation for absorption.

Ejection and absorption are, doubtless, the usual means by which blood effused in injuries is disposed of; yet I feel nearly sure it may in some instances become organized and form part of the reparative material. The cases of manifest organization of blood already referred to leave no doubt of the possibility of this happening: its occurrence can no longer be set aside as a thing quite improbable. The only question is, whether the organization of blood effused in injuries has been seen. Now I think no one familiar with Hunter's works will lightly esteem any statement of his as to a matter of observation. He may have been sometimes deceived in thinking that he saw blood becoming organized in subcutaneous injuries (for subcutaneous granulations are sometimes very like partially decolorized clots); yet I believe he was more often right: for sometimes one finds clots of blood about the fractured ends of bones which have every appearance of being in process of organization. They do not look mottled, or rusty, or brownish, as extravasated blood does when it is degenerating, preparatory to its absorption; but they are uniformly decolorized to a pinkish yellow hue. They have less appearance of filamentous structure than recent clots have, and they are not grumous or friable, like old and degenerating ones, but have a peculiar toughness, compactness, and elasticity, like firm gelatine. When clots are found in this condition, I believe it is a sign that they were organizing, for this is the condition into which, commonly, the clot in a tied artery passes in its way to be fully organized; and (which is very characteristic) you may find clots in the track of wounded parts thus changing, as if towards organization, while those about them, and out of the way of the reparative process, are degenerating.

On the whole, then, I believe we may thus conclude concerning the part that blood, when it is extravasated, takes in the repair of injuries:—

1. It is neither necessary nor advantageous to any mode of healing.
2. A large clot, at all exposed to the air, irritates and is ejected.
3. In more favourable conditions, the effused blood becomes enclosed in the accumulating reparative material; and while this is organizing, the blood is absorbed; and—

Lastly, it is probable that the blood may be organized and form part of the reparative material; but, even in this case, it probably retards the healing of the injury.—*Ibid.*

---

32. *On the Alliances of Erysipelas.*—Dr. Gull read before the South London Medical Society (May 10th, 1849), a highly interesting and practically valuable paper on this subject.

Dr. Gull stated that in the year 1847, during the winter, his attention was first drawn to the complication of erysipelas with inflammation of the fauces. The disorder then prevailed to a great extent, and was very fatal; the same has shown itself during the present spring on two occasions, and particularly during the prevalence of easterly and north-easterly winds. The object of this communication is to point out the relation of several apparently different affections to erysipelas, and to discuss the general plan of treatment to be pursued.

To rest satisfied with the definition that erysipelas is an inflammatory affection of the skin, would be to remain in ignorance of its practical nature, for such has been the advance in our method of looking on things, that we have learned to regard the word inflammation as expressing a very variable state, oftentimes such as by no means warrants depletion nor so-called antiphlogistics. That erysipelas is of the nature of inflammation we cannot doubt; we can imitate its results by applying a blister to the skin; and when the integument is loose we get, during erysipelas, a large amount of œdematous effusion, and often the production of pus in the parts beneath, as in the eyelids. But erysipelas is a peculiar inflammation, and is not, I think, necessarily limited to the skin.

In Nov. 1847, Mr. Fisher, a dresser in the hospital, sent for me to his lodgings: I found him scarcely able to speak, and sitting up in bed, complaining of much difficulty of breathing and a sense of suffocation, especially on attempting to lie down in bed. On examining the fauces, I found the soft palate red and greatly œdematous, and so elongated as to hang down upon the posterior part of the tongue like a fleshy translucent flap, and necessitating a prone position of the head to prevent its obstructing the larynx. The tongue was covered with a white creamy fur; it was indented at the edges. The pulse was frequent, and the skin hot. The whole indisposition had been preceded by shivering and uneasiness: I ordered him a brisk purgative, and afterwards the roses and quinine. The œdema of the fauces soon subsided, but on the third day, the *mucous membrane of the nose became painful and swollen, particularly about the septum:* there was a great sense of stuffing; and, on the fourth day, the erysipelatous inflammation had passed over the exterior of the nose, and subsequently the whole head and face were involved. The case terminated well under the usual treatment of infusion of serpentaria and ammonia, with wine. On inquiry, I found that he had been dressing a case of Mr. Cooper's in Martha's ward, in which there had been precisely the same order of symptoms. There occurred in that ward, and in the hospital generally, about this time, many such cases.

Eliza Phipps, æt. 28, was admitted under Dr. Hughes, Jan. 13, 1848. A single woman, employed as a servant. A week before admission, after exposure to wet and cold, she was taken with shivering, sickness, and pain in the head and limbs. Two days afterwards her throat became sore, her feverishness continued, and an herpetic eruption broke out round the left angle of the mouth. On admission, her skin was hot and dry; the face flushed; the *mouth* and *tonsils* much tumefied and injected. Tenderness below the angle of the jaw; great difficulty of deglutition; pulse 90; tongue furred; bowels open: four leeches were applied to the throat, followed by a warm poultice, and the julepum acidi hydrochlorici administered.

Two days after admission, an abscess, which had formed about the tonsil, burst, and she seemed greatly relieved; but two days subsequently the throat became again more painful; the fauces were injected, and covered in part by dirty secretion. *A small red spot formed at the inner canthus of the left upper eye.* (ung. nit. faucib.; garg. acidi nitr.; quin. disulph. gr. iij, t. d.; pulv. opii, gr. ss, vesp.; empl. lytt.; vin. rub. ℥iij.) In the evening I saw her, and found that the redness and tumefaction of the inner canthus and lachrymal ducts of the morning had now extended over the eyelids, and were distinctly erysipelatous.

The following morning, the report is that she passed a restless night, was very delirious. Pulse 160; throat less swollen and painful. *Erysipelatous inflammation* has extended an inch around the left eye; the colour is bright, and the edge well defined. The right eye is beginning to be similarly affected, the disease beginning in the same manner, from the inner canthus. (Rep. med. am. vin. ad ℥x; warm water dressing to eyes.) Subsequently, the erysipelas extended down the left cheek. The right ear and meatus became involved, and from this a purulent discharge came. Typhoid symptoms increased; the pulse was rapid, and she died nine days from admission, about the sixteenth of her attack.

A young man was admitted under Dr. Addison, for dysentery and abscess of the liver: he was suddenly attacked with difficulty of swallowing and soreness of the throat; on the third day the eyes became closed from inflammatory œdema of an erysipelatous character; the right eye was first affected, and from the point at which the disease began being at the inner canthus, about the lachrymal ducts, *it seemed to be continued from the fauces.* In a short time the forehead and nose became involved, but before the cheek was implicated, the right meatus auditorius was found inflamed, and the integuments of the ears erysipelatous; whilst a distinct layer of healthy skin, an inch in breadth, intervened between the erysipelas of the ear and that of the forehead and nose, showing two distinct extensions of the disease to the external integuments. Laryngitis supervened, and soon cut off the patient.

This case presented us with the disease, beginning in the fauces and extending to the face, through the lachrymal canal and the meatus auditorius; also downwards to the vocal cords and upper part of larynx, which, on a post-mortem examination, was found œdematous.

Three other cases of cynanche occurred in this ward within a few days subsequent to this, but none of them passed into erysipelas.

About the time of the occurrence of the first case here recorded, there happened in Stephen's ward, which is for surgical cases exclusively, several cases which seemed to point out clearly the alliances of erysipelas; first, the ordinary erysipelas of head and face occurred in several cases; and lying in adjacent beds, in the same division of the ward in which the erysipelas had occurred, were two men, neither of whom had taken any mercury or iodine; one of these became the subject of acute stomatitis, which was accompanied by red, spongy, and swollen gums, fullness and tenderness of the salivary glands, and a large secretion of saliva; presenting thus many of the appearances of severe salivation. The other had great swelling and fullness, with tenderness of the tongue. This form of glossitis I have seen on several occasions; it is sometimes so painful and distressing as to require scarification to reduce it; at least, I have seen this practiced, although the great vascularity of the organ, and the difficulty of stopping the hemorrhage, render the operation dangerous.

In one instance, I saw glossitis limited to the right side of the tongue; the fauces were inflamed, and there was considerable constitutional excitement.

From the occurrence of these cases of cynanche with common erysipelas,—from the fact that we can often trace the continuity of inflammation from the fauces to the face, through one or several of the passages by which the mucous membrane is continuous with the skin,—from the connection of these with occasional glossitis and stomatitis, and from the œdematous condition of the mucous membrane accompanying these affections, I cannot but think they are natural alliances to one common condition; and if erysipelas is used substantively to express the peculiar disease of the skin, these other affections of cynanche, stomatitis, and glossitis, and laryngitis, may fairly have the word employed adjectively, and be termed "*erysipelatous.*"

Amongst the complications of erysipelas, or rather the extension of erysipelas itself, none are more formidable than such as implicate the larynx—no diseases are more insidious, and none more certainly fatal. It is by no means infrequent to meet with these cases during the prevalence of erysipelas, and their alliance to this disease is often clearly demonstrated. In the winter of 1847, and during the early part of this spring, I saw several. Amongst the cases of glossitis, stomatitis, and erysipelas, we had others in which the fatal termination was due to an extension of the disease to the larynx, often so insidious as to escape direct observation, until serious symptoms of dyspnœa came on. Nor can we wonder at the inexperienced being deceived in these cases; because, beginning as they do with cynanche, and this being so often a very simple affection, the irritation of the larynx is referred to the fauces only, and no serious apprehension is excited until the dyspnœa rapidly increasing calls for immediate aid.

A case illustrative of the truth of these remarks, occurred in one of the surgical wards of the hospital, in a man under the care of the late Mr. Morgan. Erysipelas and the like disorders were then prevailing, and this man complained of soreness of the throat; but his case elicited no particular observation, until, early on the morning of the third day, the dresser for the week, Mr. Richardson, was called to him about half past seven o'clock, and found him labouring for breath. He immediately sent for assistance, and procured the instruments for tracheotomy; and, although but a short time intervened, and the operation was performed, the patient survived but a few minutes.

On examining the parts after death, the mucous membrane about the arytenoid cartilages and vocal chords was œdematous; here and there one of the large follicles about the fauces had suppurated; on the right side the mucous membrane was greatly injected, and when cut into, the submucous tissue was found to be infiltrated with yellow sero-purulent fluid. A regular gradation of changes could be traced around, until quite at the most distant parts; the submucous tissue was merely œdematous. The right inferior vocal chord was greatly œdematous, but translucent; the left was not perceptibly affected. The epiglottis was red and swollen.

The viscera of the abdomen were in good condition as far as the structure could be observed.

Mr. Travers, in his work on constitutional irritation, gives examples of affections of the throat during erysipelas. A woman had compound fracture of the patella. Suppuration in the knee-joint followed. Soon after this, an erysipelatous blush appeared near one elbow, and pus was distinguished in the subcutaneous cellular tissue. She went on thus for a few days, when she complained of soreness of the throat. A general redness was observed on the soft palate, from which it extended to the pharynx. The difficulty of swallowing augmented to a great degree, and difficulty of breathing followed. In this state, the poor woman died rather suddenly. The throat was not examined after death.

A gentleman, whilst intoxicated, was thrown from his horse, and received a lacerated wound of both legs, and a simple but severe fracture of one tibia into the knee-joint. Erysipelas of both legs followed, and incisions were required to evacuate the matter from the subcutaneous tissue. The patient was very low and exhausted, and erysipelas was still spreading up the thigh, when he suddenly complained of extreme sore throat. Only a general redness could be seen. In twenty-four hours after this he died, the dysphagia being complete. On examination of the throat, a diffused redness was found to be spread over the pharynx and palate, and to enter into the laryngeal cavity; there was some, but not much œdematous effusion into submucous tissue of pharynx and larynx.

Dr. Stevenson, of Arbroath, in the year 1826, publishes cases illustrating the contagious nature of erysipelas, and its connection with severe sore throat. "The disease," he says, "commonly began with a red or purplish blush, more or less extensive, over the uvula and velum, accompanied with very little tumefaction, but with considerable pain in swallowing. In many cases, the disease ended here, but in a few cases it extended to the larynx, producing a state of respiration like idiopathic croup; in others, it extended to the pharynx and œsophagus."

Diffused suppuration through the cellular tissue of the throat is another dangerous and fatal ally of erysipelas; and I have seen it appear under two forms. It cut off two of the inmates of the lunatic house at Guy's in one day, in the winter of 1847, and the day previously one died of common erysipelas. The cellular tissue may be affected from the cynanche by direct extension, or from erysipelas of the head and face extending down the neck, and implicating the parts beneath. So far as I have seen, erysipelas is often fatal in this way. This affection of the throat is to be distinguished from the so-called malignant sore throat which occurs in scarlatina; they agree only in the seat of the disease, and their fatal tendency. There is yet another close alliance between erysipelas and puerperal peritonitis; this is in general admitted, and, during the prevalence of this fatal disease in our lying-in charity last year, I obtained and examined the uteri of three women who had died of peritonitis. In all, pus was detected in the veins of the uterus, but the part of the uterus at which it was found seemed to me a fact worthy of recording. In all three every part of the uterus was examined. First of all, particularly at the part to which the placenta had been attached, but in none did the veins corresponding to this part contain any pus, and the structure seemed entirely healthy, the openings in the sinuses being filled with healthy firm coagula; but in all three the *veins about the neck* had suppurated, and all the usual marks of inflammation, viz., redness, tumefaction, &c., existed at this part. Although these three cases may have been but so many coincidences, yet it certainly is worthy of remark, that in all three the inflammation had its chief seat in the part *most liable to injury;* and in neither could it have had anything to do with the attachment or separation of the placenta.

The well-known tendency of puerperal peritonitis to spread from patient to patient, its prevalence during epidemics of erysipelas, and the frequent alternations of the two diseases where many persons are brought together, and I might also add, the tendency of both to attack persons similarly situated—thus, any injury to the surface, as in surgical operations during the prevalence of erysipelas, is most apt to form a locality for it; so, after labour, when the neck of the uterus has been stretched or bruised, as indeed it must always be during labour, an inflammation of its tissue may occur, which, like that I have described in the throat, may pass to deeper tissues, spread to the veins, and fatal complication is the result; or, if not fatal, local œdema, from coagulation of blood in the veins, and all the miseries of phlegmasia dolens.

It would be, perhaps, without practical value to discuss minutely the exact local pathology of erysipelas. That it generally terminates in vesication rather than in suppuration is due, I think, to the rapidity of the vascular changes, and the transitory nature of the disease. In many instances, it does pass into the suppurative condition, as when there is much loose cellular tissue under the skin, as about the eyelids, or, as we have seen about the lax tissue, at the upper part of the larynx.

That it is an inflammatory disorder, few will be disposed to deny; but I think as few will hence infer that we must treat it by depletion, antimony, &c. Inflammation is a condition which occurs in states of the system most widely different—as between simple pustular acne and violent typhoid small-pox; pustules result in both, and both are inflammations of the skin; but to say no more than this, would leave us far off from anything like appropriate treatment, which, indeed, can never be determined by classifying a disease, but by studying the state of the system in which it occurs.

I take it for proved, that erysipelas may be the result of contagion, as well as arise spontaneously from external and internal causes. It may occur in states of the body most dissimilar as regards vascular plethora; but, so far as I have seen, however various the general aspect, there is a want of tone in the nutrient system, and disorder of the secretive organs.

In a society constituted as this is, the question of treatment must be one of paramount interest. Men of great experience have maintained opposite plans of treatment in this disease; the depleting and antiphlogistic means being recommended by one side, tonics and support by the other. While I leave this discussion to the individual experience of the members, I may set down what is the plan of treatment pursued for the most part at Guy's. The contagious nature is admitted; and so soon, therefore, as a patient shows signs of erysipelas, he or she is removed from the general wards. A mild purgative is ordered, and if the patient be moderately young, and of fair powers, a neutral saline, and gentle nourishment; the local treatment being various, or none. The part is punctured, or flour or tepid gruel is applied.

Sometimes argent. nitr. or a solution of arg. nitr., in moderately strong nitric acid, is applied, and with variable benefit, sometimes so successfully as to limit the disease—oftener not. On one or two occasions, I have seen the parts painted with tinct. of iodine; but I do not think I have seen any good from its application. Nitrate of silver, or its solution in nitric acid, has seemed to me to act best when the erysipelas is about the trunk or the extremities.

In most cases, warm fomentations are not used. I think I have seen them do great harm when very warm, and very assiduously applied, especially in favouring the extension of the disease to surrounding parts, and to the skin beneath. It is many years since I saw a man bled, as part of the treatment of erysipelas. Very early in the disease, tonics, with ammonia, are administered, and in cases where there is doubt as to the degree to which these may be carried, we take an intermediate course, giving an effervescing mixture composed of carbonate of ammonia and lemon-juice, the ammonia being slightly in excess.

Wine in the middle and latter stages is freely administered, and sometimes from the beginning. The success of this plan is very great, even in the worst cases.

Whilst erysipelas is confined to the skin, all is easy; but when it implicates the throat, how are we to act? May we attempt to lessen the local action by leeches and poultices, whilst we at the same time give tonics and stimulants? Or, are we to change our plan entirely when these parts are implicated, and employ antimony and the like?

This is a question of immense importance, especially when we remember that the implication of these parts is the most frequent cause of death in this disease, although I believe it is often overlooked from its insidious approaches; the patient becoming dull and semi-comatose from pressure on the vessels of the neck, makes no complaint, and the cause of death is referred to the head, until the first incision through the integuments of the throat at the post-mortem elicits the exclamation—"What's all this?"

Hopeless as these cases too often are, I yet think it might be admissible to attempt to lessen the local action by the smallest amount of local depletion, employing at the same time the same remedies as from the nature of the case we should employ if the erysipelas were on the surface. I have, however, already extended this paper too far, and the subject of treatment will advantageously admit of discussion; so that, thanking you for your patience, I may await your opinions on this important subject.

In the discussion which followed the reading of this paper, Dr. Lever stated some interesting facts.

A medical friend, he said, now deceased, was engaged in the examination of the body of a woman who had died from puerperal fever, when he was called away to a case of labour. Before this was completed, his services were required at another; both mothers died of puerperal fever; one child died of erysipelas commencing at the navel. Both nurses died of erysipelas, as well as other members of their families; so that altogether, eleven or twelve deaths occurred from his friend's unfortunate attendance. Two pupils, who usually studied together, were sitting one on either side of the bed of a patient suffering from a very severe attack of erysipelas, taking notes. Both were summoned within a quarter of an hour, each to a case of labour. On the afternoon of the same day, each attended a second case; all four women died of puerperal fever; all the children of erysipelas; still, on strict inquiry, neither disease was found to prevail in the districts where these patients resided, nor was it raging among other patients of the charity. A third instance was this: A nurse, who had been in attendance on a man who had died from erysipelatous sore throat, called in the afternoon one day to tell a lady whom she was engaged to attend in her approaching confinement, that she must decline such attendance, by the advice of her medical man. She sat in the house an hour or two, and partook of some tea. The lady was confined in the night, and died of puerperal fever. The nurse was attacked with erysipelas, and also died; and yet, with such numerous and accumulated facts, he was surprised to find many practitioners maintaining opinions quite opposite to these.

Dr. Lever would further remark that, in his opinion, a disease which he could not distinguish from puerperal fever might be produced by the medical attendant going in the same clothes from the dissecting-room, or a post-mortem, whatever might have been the fatal disease of the subject. He gave a remarkable case of the former—a case of sporadic puerperal fever, where the surgeon who had been at a post-mortem examination attended a lady in her confinement, and saw her no more; this case also terminated fatally. In conclusion, he would state that, in addition to topical measures, he thought he had seen advantage from the exhibition of opium and quinine from the commencement of the attack—one grain of the former and two of the latter every three or four hours. He approved of the tonic plan of treatment. He mentioned another instance of a medical man who had persevered in his attendance on midwifery cases until he lost twelve women.

Holding the strong opinions on the subject as he did, he could not regard such persons as *unfortunate, but highly criminal; for, instead of being messengers* *of mercy, and assuagers of anguish, they resembled the destroying angel;* for, in every house they entered, they were marked by death and desolation.

Dr. P. Murphy said he had not the slightest doubt that erysipelas and puerperal fever were convertible diseases; he thought the medical man highly culpable who did not give up practice for some time when he had the misfortune to have a case of puerperal fever.

Mr. Ray said he had seen many cases of puerperal fever, and believed it was invariably conveyed by the nurse or medical attendant; he mentioned several cases in proof, and fully believed that it could be produced by other causes than that termed puerperal, as he himself thinks that in one case his patient suffered merely from his going direct to her from a post-mortem inspection.—*London Medical Gazette*, June, 1849.

---

33. *Medical and General Treatment of Local Disease in Preference to Operation.*—Thomas Hunt, Esq., has written some interesting papers on this subject in the *Prov. Med. and Surg. Journ.* (May 2, 1849). In one of them he gives the following as his conclusions:—

"The extirpation of morbid growths may be said to be *indicated* (their position being convenient for operation): 1. Wherever the disease is clearly the result of local or mechanical irritation from some external source. 2. Whenever the tumour is neither painful, tender, nor progressive, the health being good. 3. Whenever it can be fairly demonstrated that the pain of irritation of the tumour being the primary and sole cause of disturbed health, its removal will be the less of two evils. 4. A tumour in the mamma, orginally depending on disordered health, may, *after the health is restored*, become painful from the pressure of the dress, and thus the absorbent glands may be excited, and the uterine functions disturbed. Excision may be justifiable in such a case; but the proper time must be chosen, and great attention should be paid to the health subsequently.

"The extirpation of morbid growths may be said to be *contra-indicated:* 1. When failing health precedes or accompanies the appearance of local disease. 2. When the disease is advancing, the tumour sensibly growing, no local or mechanical cause of irritation being apparent. In this case, it is right to assume the existence of latent constitutional disease, and to treat the case medically, rather than surgically. 3. When there is a plurality of tumours. 4. When the disease reappears, whether soon or late after an operation for its removal.

"The reader will observe that these rules contain little reference to the condition of the absorbent glands connected with the tumour, although surgical writers of the highest eminence have generally pointed out this circumstance as the one grand distinction which indicates or interdicts excision. Swollen axillary glands have always been held to be a strong objection to the removal of a tumour in the breast; and, on the other hand, a healthy condition of these glands has been admitted as a proof that the system is not contaminated, and that, therefore, the disease may be extirpated by the knife. Against this doctrine (which appears to have been adopted, by surgeon after surgeon, from preceding writers, without much reflection), I must enter my most earnest protest. Nothing can be more fallacious in theory, or unhappy in its practical results. Nothing is more common than the enlargement of the axillary glands from inflammation of the fingers, as in whitlow, or the introduction of any irritating matter or animal poison into the fingers. Yet, who infers from this circumstance, that these glands are the seat of incurable disease? They become irritated and swollen: but the irritation and swelling subside spontaneously as soon as the exciting cause is removed. On the other hand, malignant disease may pervade the whole system, and become developed in the mamma or any other organ, and exist in the form of a tumour for months together, the health evidently giving way, while the absorbent glands remain unaffected. The conclusion is, that it is not always advantageous or safe to amputate when the absorbent glands are sound; nor, when they are swollen and tender, and inflamed, do they present any absolute proof that the whole system is contaminated. In those cases *where the question of excision can be entertained at all*, it is impossible to tell whether this secondary affection of the absorbent system be merely the effect of irritation, or an actual extension or translation of malignant disease. How, then, can any thinking man regard it as an important indication for or against an operation.

"Happily, hospital surgeons are becoming at length practically alive to the fallacy of this distinction; and it is one of the most pleasing features of the improved condition of modern surgery, that the treatment of morbid growths by extirpation, is now the *exception*, and not, as formerly, the *rule.*"

34. *Aneurism of the Axillary Artery, Ligature of the Subclavian.*—F. Le Gros Clark, Esq., relates, in the *London Medical Gazette*, July 13, 1849, a case of axillary aneurism in a man 47 years of age, admitted into St. Thomas' Hospital in Feb. 1849. The tumour, when the patient was admitted into the hospital, was about the size of a small orange, and was situated beneath the great pectoral muscle, and close to the left clavicle. It possessed all the characteristic signs of a true aneurismal dilatation of the axillary artery in the first division of its course. It pulsated forcibly, but the throb could be entirely controlled, at the same time that the swelling was sensibly diminished in size, by pressure on the subclavian artery above the clavicle. The thrill was both audible, and perceptible to the touch. When recumbent, the aneurismal sac could also be felt in the axilla. The clavicle was raised in correspondence with the size of the tumour. Pulse 60 (he had been placed under the influence of digitalis before coming to town); heart's action quiet and healthy; no evidence of any other organic disease; and all the important functions of the body were performed naturally and regularly. He was put on a low diet for a few days, preparatory to my placing a ligature on the subclavian artery.

Operation, Feb. 10th.—The patient reclined on a table, being well supported by pillows, but so as to allow the left shoulder (that of the affected side) to fall. A vertical incision was first made, to the extent of an inch and a half, along the posterior border of the sterno-mastoid muscle. The integuments over the clavicle being then drawn down, a second incision was carried freely outwards, from the lower extremity of the first, as far as the anterior border of the trapezius. By this the clavicle was freely bared, and a small artery and vein which bled freely required ligatures. When the skin had been allowed to resume its natural position, I divided the dense fascia immediately above and behind the clavicle, and conducted the remainder of the operation with the handle of the scalpel, which had been sharpened for the purpose. At this stage of the manipulation, although no undue force was employed, and the cutting instrument had been thrown aside, a vein of considerable size (probably the suprascapular, near to its termination) gave way, and poured out blood in profusion. A ligature was the only resource, and was therefore applied, at my request, by my colleague Mr. Solly, to whose prompt and able assistance I was much indebted throughout the operation. The border of the scalenus muscle was then sought for and found (nearly parallel, perhaps a little external to that of the sterno-mastoid); and the artery was at once felt pulsating upon the first rib. An attempt was first made to pass the aneurism needle from below upwards between the vein and artery; but as this was not readily effected, the direction was changed, and the needle was introduced between the lowest brachial nerve and the artery, and brought out between the latter and the vein. A strong and stout ligature of silk (of the size of small whip-cord) was carried round the artery with the needle, and readily tightened. Pulsation in the sac and artery immediately ceased, and the former became flaccid. The patient complained of loss of power and numbness of the limb, but expressed himself as relieved of the pain he had before suffered, and which arose, no doubt, from pressure on the axillary nerves.

Vespere.—Perfectly comfortable; perspires freely; pulse 72, without anything of excitement in it; no headache, nor pain in the arm; the limb which is enveloped in flannel, is quite warm.

He passed a quiet night, sleeping at intervals; on the following morning, the pulse had risen, but he continued to perspire abundantly; later in the day there was more febrile excitement, the pulse reaching 96, and being rather jerking; his diet was of course limited to slops; and towards evening the excitement had subsided spontaneously, the perspiration continuing very profuse; breathing neither laboured nor painful.

On the 12th (second day after operation), the pulse was 90, and there was an angry blush about the wound, which was tender: some purulent discharge, A dose of castor oil was given, which acted freely; and a bread poultice was applied over the wound and inflamed surface, and one of the sutures (of which two had been applied to keep the triangular flap in place) was removed.

On the 3d and 4th days, he improved, and the angry appearance of the wound subsided; the discharge was tinged with blood. On the fifth day, he had some appetite, and was allowed beef-tea. I then fancied (for I was not sure, though others said they were) that I felt a feeble pulsation in the brachial artery. Sac pulseless, firm, and diminished in size; arm warm, occasionally painful; sensation not perfect; motion, even of fingers, very limited. The discharge more simply puriform; water dressing kept applied to the wound; but the skin-flap retained its position accurately, having united along the greater part of its lower border and at its angle. On the seventh day he was allowed a mutton chop. On the ninth and tenth days, the ligatures from the two veins and the small artery came away without any bleeding. Arm free from pain, and less "numbed."

On the sixteenth day, the wound was healing, but the ligature on the artery was still firm. A small roll of plaster was placed beneath it, close to the wound, and it was then put gently on the stretch and strapped down: in this way, slight traction, in a vertical direction, was kept up. On the following morning, viz., the seventeenth day, the ligature was loose in the dressings.

From this time the progress of the case continued uninterrupted. The wound gradually healed: the patient was liberated from restraint, as prudence dictated. The tumour diminished in size and became more solid, and it ceased to cause him any inconvenience. When he quitted the hospital, April 18th, his general health and strength were good. The arm of the affected side was well nourished, but had not regained its natural strength. A very feeble pulse was perceptible at the wrist. I have since heard that he remains well.

---

35. *Aneurism of the Axillary Artery.*—Mr. HENRY HANCOCK relates (*Lancet*, July 7, 1849) a case of large aneurism of the right axillary artery, in a man 34 years of age. The tumour was large, pulsating, and occupied the whole of the axilla, and extended under the pectoral muscles, which were pushed forwards, the clavicle being considerably raised. The tumour also extended down the upper two-thirds of the arm; he could not bring his elbow to his side; his hand was swollen and numbed, and there was great loss of power and intolerance of motion in the entire limb. The tumour, which diminished on pressure, again augmented when the pressure was removed; it also diminished when the subclavian artery was compressed; there was evident bruit de soufflet, and the aneurismal thrill could easily be detected by the touch, whilst the pulsation of the tumour was evident to the eye.

On the 26th August, 1848, Mr. Hancock placed a ligature on the subclavian artery, at the first rib, immediately external to the scalenus anticus muscle. Immediately on the ligature being tied, the pulsation in the tumour ceased. The patient did well until the 10th September, when the patient complained of pain in the tumour, which showed signs of inflammation. On the 16th September, the tumour had become very red, and a serous fluid oozed from its surface. On the 17th, the ligature came away. On the 23d, the tumour, which had suppurated, burst. The patient, after this, did well until the 4th October, when, while taking his gruel, he suddenly exclaimed that his arm had burst, and immediately dropped down, the blood flowing from the sac. In spite of the usual efforts to arrest the hemorrhage, he expired in about three quarters of an hour, on the eighteenth day after the ligature had come away, and the fortieth from the operation.

Post-mortem examination.—A large cavity occupied the whole of the axilla, extending under the pectoral muscles to the sternum in one direction, and down the arm nearly to the elbow in the other; the sac derived but little from the artery, the coats of which entered but slightly into its formation. The subclavian axillary and brachial arteries having been exposed from the arteria innominata, to the bend of the elbow, the axillary artery was carefully examined; it was healthy throughout, except where it communicated with the aneurismal cavity by an opening of about an inch in length, opposite which it was slightly dilated; as may be seen in the drawing. The artery on the distal side of the opening was diminished in size. The ligature had been placed on the subclavian, nearly midway between the thyroid axis, and the first of the thoracic branches, which, like those of the thyroid axis, appears to be enlarged. The ends of the artery divided by the ligature were closed by adhesive inflammation, strengthened by a coagulum in each of half an inch in length, but which did not extend as far as the collateral branch given off above or below it, in this respect differing from the extent to which it has been commonly supposed to proceed. The artery was of its natural size, and gave off six branches between the part on which the ligature was applied, and the opening in the side of the artery into the sac. Three of these were large, one being equal in size to the thyroid axis, and it is my belief that the fatal hemorrhage took place from one or more of these vessels bringing their blood backwards into the artery above the opening into the sac. This was suppurating, and contained only a small coagulum opposite the opening in the artery, about the size of a small walnut, which adhered to its edges, and had in all probability closed up the communication between the vessel and the sac, thus preventing the entrance of blood into the latter. When the adhesions of this clot gave way at its lower and anterior portion, for about half an inch, the sudden and fatal hemorrhage took place. It must be admitted that, although the operation was successful in so far as the application and separation of the ligature, the division of the artery and the adhesion of its extremities were concerned, it was of very little use in this case. It afforded the patient a chance of life; but it singularly failed in the usually supposed result of obliteration of the trunk of the vessel, even to the next collateral branches. The communication between the branches of the thyroid axis and those on the distal side of the ligature soon becoming free and direct, the circulation to the opening in the vessel was in fact restored, so that, from the moment the suppuration caused the skin to give way, the patient's existence depended upon the small coagulum filling up the opening, thus showing the importance of the sac, and the necessity of its remaining entire, in order to ensure success in the operation for aneurism, even when the ligature is applied so closely to the disease as it is usually done in cases of operation on the subclavian artery.

If I had had the good fortune to be present when the bleeding began, I should at once have laid open the sac of the aneurism, now become an abscess, and placed my finger, if possible, on the bleeding vessel, until a ligature could be affixed around it; I should, in fact, have treated the case as one of wounded artery, and which would in all probability have required another ligature at its opposite end.

This case proves in a very remarkable manner the importance of the sac in all cases of aneurism, and the utter inapplicability of the Hunterian theory of the operation for aneurism to a wounded artery, in which no sac exists, an inapplicability which Mr. Guthrie was the first to bring under the notice of the profession, and which he has so strenuously urged in his lectures, lately published, on Wounds and Injuries of Arteries.

The statistics of the various operations recorded in the European journals bear testimony to the unfavourable results of the present mode of proceeding. I have collected the particulars of forty-two cases, and they demonstrate that, in the aggregate, the recoveries number two to one failure; that, in those cases traced to injury where the ligature was placed in the situation usually selected on the subclavian, external to the scalenus anticus muscle, the failures are nearly equal to the recoveries; of those in which the axillary artery itself was tied, the whole recovered, as may be seen in the following summary:—

Of the forty-two cases, twenty-seven recovered, fourteen failed, and the result of one is not stated. Of the twenty-seven recoveries, fourteen were the result of accident, and thirteen spontaneous, or idiopathic. Of the fourteen failures, eight were traced to injury, and six were spontaneous, and of the whole number more than half were those in which the subclavian was tied, the aneurism originating in violence, so that the following are the results:

Four cases the result of accident, the axillary artery tied, and the whole recovered. In three of these, the sac suppurated, and in one of the latter secondary hemorrhage took place on the nineteenth day, but it was easily suppressed by styptics.

Eighteen cases the result of accident; the subclavian artery tied. Ten succeeded, eight failed. In two of the successful cases the sac suppurated, one in a few days, the other not until three years after the operation. Of the eight failures, the sac suppurated in four, in one bursting into the pleural cavity.

Nineteen cases of spontaneous axillary aneurism, the subclavian artery tied; thirteen succeeded, six failed. Of the successful cases, the sac suppurated in three. Of the unsuccessful cases, the sac suppurated in one.

The above, whilst giving the results of the two modes of operation, also shows the relative number of cases in which the sac suppurated in the traumatic and idiopathic form of axillary aneurism, whilst in twenty-two cases resulting from injury, we have nine; of nineteen cases originating in disease, we have only four followed by suppuration of the sac.

After the data here given, ought we so indiscriminately to tie the subclavian artery in cases of axillary aneurism as has hitherto been done? Should we not rather tie the axillary artery itself in all cases where the mischief can be traced to a direct injury, and where the size of the tumour admits of our reaching this vessel? Hitherto, whether the aneurism has been caused by a stab, a gunshot wound, rupture by violent stretching, a blow or crush, or by disease, with very few exceptions the treatment has been the same. According to this method, the ligature is applied at such a distance from the sac, that the blood is carried freely into the main trunk between the ligature and the point of rupture; and consequently, in those instances, as in the case above related, where the vessel retains its natural size, and the sac suppurates, the patient must be exposed to secondary hemorrhage, and its lamentable consequences; whereas, if the axillary artery is tied close to the sac, and below the large collateral branches, the free current of blood into the sac is prevented, so that, should suppuration of the latter take place, it would diminish but slightly the chances of recovery as far as hemorrhage is concerned. We have seen the large proportion of recoveries where this practice has been adopted, and been followed by suppuration; in three out of four cases, suppuration took place, but all recovered; and in one, although secondary hemorrhage ensued, it was so slight as to be easily restrained by styptics. How different is this from what obtained in the case I have detailed; there the sac suppurated, and hemorrhage occurred, but so violent that the patient, although receiving immediate assistance, was to all intents dead from the moment it gushed forth.

---

36. *Case of Popliteal Aneurism.* By J. D. Wright, Surgeon-Major Grenadier Guards. (*Proceedings of Royal Med. Chirurg. Soc.*, June 12th, 1849.)—This case derives its interest from the fact of a favourable termination having followed the application of a ligature on the femoral artery after the aneurismal sac was ruptured, compression having previously failed in effecting its obliteration. The patient was aged 37. Six days prior to his admission into the hospital, he had become aware of a popliteal swelling, to which his attention was directed by pain in the knee. The tumour, on examination, was found to be as large as an orange, and presented all the characteristics of true aneurism. He was bled, and the pad of an Italian tourniquet applied over the femoral artery, just before it enters Hunter's canal. Effectual pressure could not be borne continuously; but the limb gradually became accustomed to partial interruption of the flow of blood through the artery, and the tumour became smaller and more solid. On the eighth day, however, the sac burst whilst the patient was at rest, and it was deemed advisable to tie the femoral artery, which was done after the lapse of only three hours. The ligature separated on the twenty-sixth day, and the wound healed kindly. A twelvemonth has since elapsed: the man is well, and the tumour is reduced two-thirds of its volume. *London Med. Gaz.*, July 6, 1849.

37. *Popliteal Aneurism successfully treated by Pressure.*—Mr. Charles Hawkins mentioned a case of popliteal aneurism successfully treated by pressure. The patient was ninety years of age, and under the care of Sir B. Brodie. He had been the subject of various maladies, and seven or eight months before death a pulsating tumour presented itself in the ham. There was no trace of any other disease in the vascular system. A piece of amadon plaster was placed over the swelling, and kept in position with a bandage. All pulsation ceased in four or five months. He died of other diseases. All the usual appearances of a cured aneurism were found after death.—*Ibid.*

38. *Galvanic Acupuncture — Aneurism of the Subclavian Artery obliterated by it.* — M. Abeille, assistant surgeon to the Hospital of Val de Grâce, at Paris, lately brought before the Academy of Medicine a case of aneurism of the subclavian artery, which he succeeded in obliterating by galvanic acupuncture. The subject is a maiden lady of sixty-five, and the aneurism was as large as a hen's egg. The patient having been put under the anæsthetic effects of ether, four steel needles, two inches long, and one line in diameter, were thrust into the sac in pairs, to the depth of about three-quarters of an inch, and these were put in communication with a galvanic trough, containing twenty couples. The poles were then alternately put in contact with each pair of needles, and this contact never lasted more than twenty minutes. The tumour soon diminished in size, became firmer and more resisting; its pulsations gradually disappeared, and the beating of the radial artery stopped. The galvanic apparatus acted upon the needles for thirty-seven minutes. When the tumour became quite hard, and presented no more pulsations, the needles were withdrawn. A few drops of blood escaped by the apertures left, and the skin was a little scarified around the latter; a cold compress was applied on the tumour, complete rest enforced, and strong pressure applied on the course of the artery. This pressure was kept up for about ten hours. On the next day, a slight vibration could be perceived in the tumour, but the radial pulse had quite disappeared; the whole arm and forearm were very cold, and the seat of a very uncomfortable formication. Motility of the fingers was abolished. From the third to the fourth day the pulse at the wrist reappeared, the little eschars fell off, and on the fifth day the tumour began to decrease. Thirty-seven days after the operation, there was no prominence of the skin to be any longer distinguished. The artery, three months afterwards, seemed to have slightly increased in size. The patient was seen repeatedly for two years, and the cure was completely maintained. M. Abeille, after the report of this successful case, gave the Academy some details respecting a certain number of experiments on galvanic acupuncture performed upon dogs. The trough was made to act for five minutes on the femoral artery of a dog, the needles having been thrust through the soft parts. The animal was killed two days afterwards, and a plug, one inch in length, was found; it extended to the next collateral branch, was very consistent, and already adhered pretty firmly to the parietes of the vessel. The concentric layers could be distinguished very plainly by a transverse section. In the second experiment, the artery was laid bare, and acted on as above. The dog was left to himself in a room for twenty-four hours, then operated in the same manner on the other limb, and killed the next day. Both arteries were examined carefully, and divided transversely two inches above and below the plug. On introducing a stilette by the superior or inferior aperture, its progress was steadily resisted by a hard body closely adhering to the parietes of the vessel. The plug, on being laid bare, presented the same aspect as the one mentioned above, and the same results were obtained in the eight experiments which followed the two which have just been described. The author has never noticed any inflammation in the various arteries upon which he had experimented, except the pseudo-membrane which connects the plug with the vessel be looked upon as the result of phlegmasia. This membrane, which really is the consequence of an inflammatory process in the internal coat of the vessel, will be produced whenever the obliteration of an artery takes place, howsoever this state may have been brought about. It is therefore not the direct consequence of the galvanic agency. As to the value of the opera-

tion, the author adduces the following remarks: The pain produced by galvanic acupuncture is far beyond any other, and this fact alone would be sufficient to give the ligature the preference whenever the latter can be used with advantage, as, for instance, in aneurism seated on the limbs. The dangers of acupuncture, and the accidents to which it may give rise, are equal to, if not above, those which may follow the ligature of vessel. Acupuncture may cause hemorrhage when it is not successful, or cauterization of the skin and the parietes of the sac, if very great precautions be not taken; inflammation or suppuration of the latter, and very serious consecutive hemorrhage, &c. If the galvanic operation were less painful than the ligature, it might be tried first, and tying of the vessel had recourse to in case of failure. But it frees the patient neither from pain nor danger, and will never stand as high as the ligature in aneurisms situated on the limbs. In short, acupuncture may be of great assistance in certain exceptional cases, in spite of the atrocious pain it produces. This is the only advantage which may be conceded to it. This advantage would, however, become immense, if it became very evident, by a series of facts and pathological specimens, that coagulation is the constant effect when galvanic acupuncture is performed upon human blood. The Academy has appointed Messrs. Roux, Poisseuille, and Gimelle, to report upon this paper. It is gratifying to find the author of a paper on a peculiar operation, and who can boast of a successful case, to be so very sober in his laudations, and so conscientious in the pointing out the various disadvantages of the process. M. Petrequin, of Lyons, who originated the use of galvanism for the cure of aneurisms, was rather more sanguine. M. Velpeau has tried it at La Charité, and met with several failures.—*Lancet*, Sept. 1, 1849.

39. *Dislocation of the Humerus, with Fracture.*—Mr. Syme has lately met with a case of dislocation of the head of the humerus into the axilla, complicated with fracture about the middle of the humerus. This double accident was exceedingly rare. The patient had fallen through a trap door into a cellar, and his arm had become entangled among the spokes of a ladder during the fall. It was determined that the dislocation should be reduced, before an attempt was made to set the fractured bones. For this purpose, the forearm was bent upon the humerus, and a bandage was then rolled round the whole arm as high as the shoulder. Over this, a couple of Gooch's splints were placed; the lac was then attached above the seat of fracture, and secured by another bandage. Extension was made in the direction of the long axis of the trunk, a large pad being first stuffed into the axilla. Reduction was readily effected, and the subsequent progress of the case had been satisfactory.—*Proceedings of Edinburgh Med. Chirurg. Society* in *Monthly Journ.*, July, 1849.

40. *Counter-Openings.*—M. Diday states that surgeons have either given no directions, or only such as are erroneous, for the mode of making counter-openings. The intention of these being to prevent the burrowing of pus, certain conditions are to be observed:—

1. The internal orifice of the canal about to be created is to be situated at the very extremity to which the detachment of the tissues has extended. 2. The new canal must traverse the tissues in the most favourable direction for the free issue of pus. Inguinal suppuration has a great tendency to produce separation, the burrowing inwards at the genito-crural bend being greatly favoured by position, and the lamellar character of the cellular tissue. If a counter-opening is made *perpendicularly* to the surface of the skin, large as this may be, the detachment of parts still goes on, as the pus, to enter it, would have to penetrate against the action of gravity. The artificial canal must, therefore, be itself *vertical;* to accomplish which end the tissues must not unfrequently be passed through obliquely rather than directly, the *route* being, in fact, a longer but more accessible one. 3. The opening must be large enough, though this is a matter of less consequence if its situation and direction have been well chosen. 4. The new track should be of as equal a diameter as possible throughout. 5. It must be so made as to allow of the introduction, not only within the lips of the

incision, but into the whole extent of the canal, of a tent of lint or charpie, without which its permeability cannot be maintained.

Supposing the above indications to be correctly laid down, they serve to show the erroneousness of the present practice, viz., the projecting the point at which an incision is to be made on a grooved conductor, and cutting down upon it from without inwards. This is sometimes difficult, and causes unnecessarily large incisions, and undue manipulation of the part. It is, in the author's opinion, a capital error to incise from without inwards; and, after having ascertained, by means of a probe, the direction of the sinus and that of the desired opening, he passes in a small trocar with its canula, not exceeding a probe in size, and, having reached the extremity of the sinus, thrusts the trocar forward with some degree of force, so as to make its point appear through the skin at the desired place, after which he removes it, leaving the canula *in situ.* The incision, however, usually requires further dilatation, and to this end he places the point of a straight bistoury in the end of the canula, which projects externally, and by pushing in the one while he withdraws the other, the entire track of the wound is equally enlarged. The canula is again introduced for the purpose of affixing the tent to it.—*Brit. and For. Med.-Chirurg. Rev.*, July 1849, from *Gazette Méd. de Paris*, 1849, No. 1.

---

41. *Successful Treatment of Morbus Coxæ, in its first stage, by Mercury.*—Dr. Bellingham communicated to the Surgical Society of Ireland (April 28, 1849,) three cases of morbus coxæ, in the first stage, successfully treated by mercury, with some very interesting remarks upon the advantage of this method of treatment, and upon the infrequency of laxation of the head of the femur, in the third stage of this disease.

It is scarcely necessary (Dr. B. remarks) to say that the treatment in the cases he narrated, and which proved so satisfactory, was introduced by Dr. O'Beirne, of this city. It is scarcely necessary either to observe that, until the year 1834, when Dr. O'Beirne called the attention of the profession to the great value of mercury in ulceration of the cartilages of joints, this medicine was supposed to be contra-indicated in such cases—nay, it was considered to be unsafe practice to push mercury to the extent of salivation in this and similar diseases, which were regarded as of a highly scrofulous nature, until he led the way, showed its perfect safety, and demonstrated its superiority over the other measures previously in use.

That mercury, given until the system is brought under its influence, is capable of cutting short morbus coxæ in its early stage, the cases originally published by Dr. O'Beirne, and which have appeared since, sufficiently prove: yet, notwithstanding the strong testimony in its favour, this plan of treating the disease does not appear to be carried out to the extent it deserves; and I have brought the foregoing cases before the Society with the object of recalling the attention of surgeons to its value in this disease.

When we bear in mind how much pain and suffering attends morbus coxæ, if it is allowed to pursue its ordinary course, and this not for days only, but often prolonged through weeks, or months, or years; and that when the patient recovers, he recovers with a shortened, deformed, and wasted limb, which incapacitates him from filling any active employment, while the disease in some instances has a fatal termination, we can appreciate the importance of the improvement in its treatment introduced by Dr. O'Beirne, by which the disease is cut short in its first stage, the pain and suffering to which the patient would otherwise have been exposed avoided, and a cure without any deformity brought about.

In order to insure all the benefit which mercury is capable of effecting, the treatment should be commenced at as early a stage of the disease as possible. Mercury, although almost a specific in one stage of this complaint, cannot be expected to have such an effect when the disease has advanced to complete disorganization of the joint—indeed, the same remark applies to many other diseases, and to many other remedies besides mercury in morbus coxæ; a medicinal substance which is an active remedy in one stage, proving either useless or positively injurious in another stage of the same disease. This perhaps may be one reason why a plan of treatment which possesses so many advantages, is not more generally adopted; it unfortunately too often happening either that the patient neglects to seek advice in time, or the disease is overlooked or mistaken in its early stage, and the treatment is only commenced at a period of the disease when the same amount of benefit cannot be expected from the exhibition of mercury.

In order to insure the beneficial effects of mercury in morbus coxæ, it is absolutely necessary that the joint should be maintained in a state of perfect rest; the patient is of course to be confined to bed, and all motion strictly prohibited. When the treatment has failed, it has probably been owing more to neglect of this precaution than of any other. It is impossible in the majority of cases to make either the patient or his parents comprehend the necessity for absolute rest of the joint; as soon as the patient obtains some relief from pain, he is inclined to get up and move about; and his parents, under the influence of old-fashioned prejudice, that "confinement to bed will weaken him," do not interpose to prevent it: the consequence is, that the disease progresses, and the mercurial plan of treatment is brought into undeserved discredit. For this reason, the treatment of private patients labouring under this disease is less satisfactory than of hospital patients: in the latter we can enforce the measures which we consider necessary, and we are sure that they will be carried out; whereas in private practice most of those whom I address probably know from experience that we seldom can have the same assurance.

In the majority of cases, it appears to me to be advisable, in addition, to take blood from the vicinity of the joint by means of leeches or cupping, or both, and the nearer to the affected part the better; hence leeches over the front of the articulation often give more relief than cupping above the trochanter. The local abstraction of blood is not absolutely necessary, as Dr. O'Beirne has shown, but as it generally contributes to relieve the pain, I have always employed it. Subsequently, counter-irritation, by means of blisters in the vicinity of the joint, will generally be advisable; they were employed in each of the cases detailed above.

Notwithstanding that the plan of treating morbus coxæ by bringing the system quickly under the influence of mercury, has been before the profession for some years; and although it possesses many advantages over other modes of treating this disease, surgical writers do not appear to be aware of its full value. If we turn to works on surgery, or to special treatises upon this disease, we find it insisted on by few, the name of the surgeon who introduced the practice hardly mentioned, and scarcely a reference to the published cases which have been successfully treated in this country; arguing either that surgical writers are not generally aware of its advantages, or if they have employed it, they cannot have done so at the period of the disease to which the treatment is most applicable, or observed the precautions in its administration originally pointed out by Dr. O'Beirne.

In the foregoing remarks, I have confined myself to the immediate subject of my communication to the Society, and have contented myself with noticing the power which mercury possesses of cutting short hip-joint disease in its first stage, and of thus saving the patient from the pain which he would necessarily have undergone, and from the deformity which would have ensued, if the disease had been allowed to pursue its usual course. I am aware that Dr. O'Beirne has employed mercury with equally beneficial results in the more advanced stages of this disease, as well as in ulceration of the cartilages of other joints, and that since the year 1834, when he first called the attention of the profession to it, his experience of its value has been most ample; and I shall only add, that I hope he has not forgotten the promise he then made, to communicate to the profession the results of his further experience of mercury in these diseases.

When morbus coxæ has gone through its several stages, shortening of the limb to a greater or a less extent is always the result, and the shortening and deformity are always more considerable if the patient was very young at the period of the attack than when the disease occurs after the bone has arrived at its full development. Until within a few years the shortening of the limb was explained by the luxation of the femur on the dorsum ilii, which was believed always to take place, in consequence of the acetabulum being widened and the head of the bone diminished in size by the destruction of the articular cartilages and caries of the bones, when the muscles inserted about the great trochanter were supposed to draw the head of the bone out of the acetabulum upon the dorsum ilii—in fact, from the constancy with which this was believed to occur, the disease was named by the French surgeons "Spontaneous dislocation of the head of the femur," under which title it is described in Boyer's treatise on Surgery.

The results of more recent pathological investigations have shown that dislocation of the femur occurs less frequently than was at one time supposed; I believe myself that it is a rare result, and as I have some specimens of the disease here which illustrate it (which I wish to present to the museum of the College), I will take the opportunity to make one or two remarks upon the point in question.

Those who look upon spontaneous luxation of the head of the femur as the ordinary result of morbus coxæ, appear to me to argue as if they supposed the muscles about the hip-joint to be in no way implicated in the disease; and that as soon as the acetabulum becomes widened, and the head of the femur diminished by caries, these muscles come into play, and draw the head of the bone out of its socket. Now, we know that, in the early stage of this disease, the glutæi muscles are wasted and flaccid, and that when the disease has advanced to the formation of matter, all the parts are more or less agglutinated. It is obvious, therefore, that the glutæi muscles, which are atrophied from the first, and suffer along with the other tissues in the advanced stage of the disease, must be incapable of acting as they would in health; while, even if their fibres were unaltered, as long as the capsular ligament preserves its attachments, they could not draw the head of the bone upon the dorsum ilii. Spontaneous luxation of the head of the femur consequently, instead of being a common effect of morbus coxæ, ought to constitute the exception to the general rule, and should only be observed in very young subjects, in whom, from the condition of the bones, caries make greater ravages; and in such even it probably seldom occurs unless some exciting cause capable of producing it comes into operation at the period.

The preparations upon the table are four in number. In three of these, I may observe, the left hip-joint was the seat of the disease, as it was also in two of the three cases I have detailed to the Society. These morbid specimens were taken from subjects who died at variable periods after the disease had run its course. One is from a man in whom the disease had gone through its stages, ending in anchylosis, twenty years previously, and who, up to his last illness, had been able to earn his bread as a labourer. The head of the bone has not left the acetabulum, and osseous matter in great abundance has been thrown out around it.

The second is from a young female who lived for six or seven years afterwards, and died of disease of the brain. The third is from a boy who died of dysentery before anchylosis had been quite completed. In the two latter preparations, it will be seen that the head of the femur has not been destroyed, nor has it escaped from the acetabulum, but it rests against its upper edge, the greater part of the head of the bone being still in the cavity, while osseous matter has been thrown out about it, uniting the two bones to one another here.

The other preparation is from a boy, aged 11, who died in the advanced stage of the disease; in this instance the right hip-joint was engaged, and dislocation of the head of the femur upon the dorsum ilii had taken place shortly before death; the acetabulum, it will be seen, is very shallow, and the head of the femur diminished in size. This patient, I may observe, laboured also under scrofulous disease of the kidney on the same side, pus was passed with the urine, and on examination the pelvis of the kidney was found to be enlarged and full of pus; the ureter also was increased in size, and its coats much thickened. He had suffered during life from symptoms simulating urinary calculus, and the coats of the bladder were found to be thickened, and its mucous membrane ulcerated. Here no attempt at anchylosis had been made, as the patient died very soon after the luxation occurred; the point where the head of the femur rested upon the dorsum ilii is marked by a different shade of colour from the rest of the bone.

As I am upon the subject, I would wish to make one remark upon an operation which was practiced many years since by the late Mr. Hewson of this city, and which has been recently revived—I allude to excision of the head of the femur in certain cases of morbus coxæ in its advanced stage. Now, this operation, I presume, would not be undertaken unless dislocation of the head of the femur had taken place, and as this appears to be rare, the cases must be few in which it could be called for. In addition, before luxation of the head of the femur can occur, the acetabulum must be implicated in the disease as much as the femur. I cannot understand, therefore, what great benefit can be expected to result from the operation unless the whole of the carious bone can be removed, which is out of the question. I can understand, indeed, that if the head of the bone becomes detatched by the caries, its removal as a foreign body may be required; or that the incision down to the diseased bone in the operation, by allowing a more ready outlet to the matter, may relieve the constitutional irritation, and dispose the parts to recover themselves; the latter end could, however, be accomplished by milder measures; and notwithstanding the high authority under which this operation has been reintroduced, it is one which it is obvious can be very seldom necessary, and from which the benefit to be expected must at best be doubtful.

Dr. Henry Kennedy, referring to the employment of mercury in this disease, observed, that it was a mistake to suppose it was universally attended with success, for it was well established that cases were met with in which it did not exactly answer. Two or three such instances had fallen under his own notice. In one of them the disease proceeded in its course though the patient was brought under the full influence of mercury; and in the other, after a temporary improvement, a relapse occurred at the end of a week, and the disease then went on as in the former instance.—*Dublin Medical Press,* May 30, 1849.

---

42. *Syphilitic Tubercles on the Larynx—Tracheotomy—Cure.* By M. Ricord.—A man, thirty-three years of age, was admitted, on the 5th of June, 1849, into the Hôpital du Midi, with tertiary syphilitic symptoms. His left shoulder and arm were affected with a tubercular eruption, and the scrotum presented the same condylomatous aspect. There was, besides, great dyspnœa and loss of voice. These symptoms were referred to an indurated urethral chancre, contracted in 1838, for which no mercurial treatment had been used. M. Ricord diagnosed syphilitic tubercles in the larynx, similar to those appearing on the shoulder and scrotum, resting his diagnosis on the following reasons: The tubercles had existed these four years, and the hoarseness and dyspnœa three and a half, though the latter had become aggravated only two months ago. No member of the patient's family, either living or dead, had ever had any symptoms of consumption, and the examination of the chest (very imperfect, from the noisy breathing) presented only a very slight dullness under the left clavicle. The man was put on the usual treatment of tertiary symptoms—viz., on iodide of potassium; and it was hoped that the well-known and rapid effects of this salt on tertiary syphilis would obviate the necessity of tracheotomy. But the very next day after admission, the patient was seized, towards the evening, with such fearful fits of dyspnœa, that he walked about the gardens and yards the whole night, gasping for breath. At 7 o'clock in the morning, when M. Ricord began his visit, it was evident that no resource but tracheotomy was left; and though the eminent surgeon was ill of cholerine, and his pupils were entreating him to allow one of his colleagues to act in his stead, he made preparations to operate at once. The patient could hardly draw his breath when he was brought in; and scarcely had M. Ricord begun his incision, when the subject was perceived to be a corpse. This was an awful moment, and the bystanders thought all was over with the poor man, when M. Ricord rapidly cut away four rings of the trachea from the cricoid cartilage downwards; and

setting aside every feeling of repugnance, he applied his mouth to the aperture, rendered very repulsive by a recent blister, drew with his breath the blood and pus which were obturating the trachea, and replaced these obstructing fluids by a vigorous insufflation of air into the patient's lungs. This being repeated rapidly fifteen or twenty times, restored life to a corpse which revived amidst the deafening applause of a numerous concourse of pupils. Thoughtless of his besmeared face, and mouth impregnated with purulent matter, the skillful and generous surgeon would not think of himself until he was quite sure that his patient was beyond the danger of suffocation.

Those who witnessed this scene will hardly ever forget the prompt and truly philanthropic conduct of M. Ricord. The tracheal aperture was kept open by curved forceps, fixed by bands passing under the axilla; and the patient was put upon emollient fumigations and iodide of potassium. On the 9th, he could take broth, had no fever, and spoke. On the 11th, he smoked a pipe by stealth, spoke, and breathed somewhat through the nose: M. Ricord replaced the forceps by a canula. On the 14th, every one was astonished to witness the extraordinary effects of the iodide; the patient laid the canula aside, put on his cravat, and breathed easily through the nose. On the 22d he spoke and breathed with ease. The eventual cure was now no longer doubtful, and the patient was ordered to go on with the same treatment.—*L'Union Médicale.*

---

43. *Traumatic Tetanus treated by Chloroform.*—Dr. SAMUEL G. WILMOT relates, in the *Dublin Medical Press* (July 18, 1849), a case of acute traumatic tetanus in a boy 12 years of age, treated by chloroform. Its administration always afforded a temporary suspension of the spasms, but without the least permanent abatement of the disease, which terminated fatally.

---

44. *Case of Suffocation from the Closure of the Glottis by a Piece of Meat.* By R. P. COTTON, M. D.—A maid-servant, aged 23, in the family of a well-known surgeon at Kensington, was waiting at dinner, and after removing one of the dishes, ran hastily into the kitchen, in a state of extreme distress, which she was unable to explain otherwise than by pointing to her throat: in a few moments she fell upon the floor struggling violently, and in another minute was dead.

An opening was made with all possible expedition through the crico-thyroid membrane, but the moment when this might have saved, her life had unhappily fled. All was conjecture as to the cause of this painful event: the throat was examined without leading to an explanation; on looking into the mouth nothing but a large amount of saliva and mucus could be seen; and, although there was a suspicion of the real history of the case, nothing could decide it prior to the *post-mortem* examination.

On the following day, by an order from the coroner, I proceeded to examine the body, when the following appearances presented themselves:—

The face and neck were much congested, and of various shades of blue and purple, and the superficial veins generally distended with very dark blood, whilst the intervening skin was pale and flaccid.

Both the abdominal and thoracic cavities were in a healthy condition, but the organs within them greatly engorged with a dark fluid blood.

On removing the larynx with the neighbouring parts, a piece of meat, weighing about six drachms, was found firmly wedged in between the alæ of the thyroid cartilage, pressing the epiglottis downwards, and the arytenoids forwards, so as completely to close the opening of the glottis; the former was somewhat twisted upon itself, in such a way that, whilst one of its lateral margins was pushed downwards upon the posterior surface of the latter, the other was turned upwards, as if from a violent expiratory act, taking place probably as a last effort. The morsel was so firmly pressed forward beneath the base of the tongue, that had the mouth been opened during the struggles of the patient, it would certainly have escaped notice; and a probang passed down the œsophagus might easily have slipped over it unobserved. The piece of meat was of a triangular shape, and placed with the apex forwards, the base of the triangle measuring two inches and a quarter, which will sufficiently account for it not passing the thyroid cartilage, the width of which, at the commencement of the superior cornua, does not commonly exceed an inch and a half, and is not very readily extended.

Although this case adds to the number of those chiefly interesting from its rarity, it is not without its practical lesson. Where sudden asphyxia occurs under similar circumstances, a recollection of it might lead to suspicion of the cause, and the life of the unfortunate person be preserved.

I think that in most instances it would be found an extremely difficult operation to remove the morsel with the fingers or forceps, and the attempt might increase the spasm, and be the means of losing the few precious moments at our disposal; certainly, in such a case as the present one, it would have been useless, even had the meat been less unfavourably situated, both from the urgency of the symptoms, and the violent struggles of the patient. I believe that laryngotomy or tracheotomy would be the proper practice, and might be performed with the less hesitation from the comparatively little risk attending it, as the opening could be closed very shortly after the real cause of danger had been removed, and which the operation itself might effect by admitting air from beneath, and thus forcing up the epiglottis.

It is an interesting question, whether the presence of foreign bodies lodged in the pharynx or upper part of the œsophagus, and pressing more or less upon the larynx or trachea, can produce suffocation by the supervention of spasm.

All the fatal accidents from imperfect deglutition on record, with, perhaps, one exception, have resulted from mechanical closure of the glottis; and as there is abundant evidence that pressure upon the vocal apparatus, produced by tumours, or foreign bodies lodged about the thyroid cartilage, has given rise only to stridulous breathing, far short of threatening suffocation, it may, perhaps, be inferred that, as a general rule, spasmodic action of the glottis, unless caused by a severe amount of obstruction, is insufficient to cause death. The truth can be ascertained only from experience; but the cases hitherto supposed to show that mere spasm may be fatal, are far from conclusive on the point. In that referred to above, which is recorded in the second volume of the 'Dublin Hospital Reports,' although but slight pressure existed upon the trachea, the right subclavian artery, which took an irregular course, was wounded by a piece of bone, and the consequent effusion of blood into the cellular membrane of the neck must have greatly complicated the result. Dangerous spasm would, of course, be less likely to result from tumours, in consequence of their gradual development; and in the case of foreign bodies, much might depend upon their position. If upon, or closely bordering to, the aperture of the glottis, a permanent spasm would be likely to result from the reflex attempt to resist their entrance, similar to what occurs from the presence of irrespirable gases, and in drowning; but if at a lower point, the muscular movements would more probably be of an irregular kind, chiefly directed to their dislodgement, and not so particularly to the protection of the glottis. As the matter, however, can be decided only by an examination of cases, and these are, happily, not very common, I considered the present one should be recorded; for although it does not deny the possibility of spasm, it contributes to the list of the few already known in which such did not produce the fatal result, and may thus afford negative evidence that death in such cases is comparatively rare from that cause.—*London Medical Gazette*, Dec. 8, 1848.

OPHTHALMOLOGY.

45. *On Sympathetic Ophthalmia.* By Prof. Jacob.—In treating of Inflammation of the eye from injury, the fact that such inflammation sometimes extends to the other eye should not be forgotten. The disease so propagated should even perhaps be noticed as a distinct species, or variety at least, of ophthalmia or iritis, in consequence of its origin, nature, and progress; and it is so considered by Dr. Mackenzie, who calls it Sympathetic Ophthalmia, or *Iritis*

Sympathetica. Whether or not it is to be attributed to what is called sympathy, or a certain participation in nervous influence, it is unnecessary to discuss here; all that is required for practical purposes is to establish the correctness of the view which assigns the one inflammation as the cause of the other. Of this it does not appear that there can be any rational doubt; every surgeon of experience could probably verify the inference by reference to his own practice; indeed, the consequence has so often been observed that the wonder is its not taking place oftener, for fortunately it is not a frequent one. In treating severe injuries of the eye, and giving opinions and advice respecting them, it is therefore necessary to bear this in mind, in order that every measure adapted to the alleviation of inflammation and irritation should be adopted, and that the possibility at least of extension of the disease to the other eye should be pointed out to the patient.

The *sympathetic* inflammation is a general inflammation of the eyeball. There are the usual sclerotic vascularity, general haziness of the transparent parts, alteration in colour of the iris, and defective sight at first; followed by still greater change of colour in the iris, amounting to green or yellow tint, contraction, irregularity, and adhesion of the pupil, opacity of the lens and its capsule, and total loss of vision. How far this disease depends upon injury of some particular parts of the wounded eye does not appear to be settled. Dr. Mackenzie seems to think that it takes place most frequently when the ciliary ligament (*annulus albidus*) is injured, and that extensive lacerated wounds, including the iris, also provoke it. This is not improbable, considering the great number of nerves passing into these parts, and the great vascularity of the iris; but the observation, in fact, means that great injuries, which necessarily involve the iris and choroid membrane, are more frequently followed by this consequence than smaller ones, in which the cornea or sclerotic only are wounded. Such great injuries are not, however, so often followed by this sympathetic ophthalmia as might be supposed from accounts given of particular cases; on the contrary, they so frequently occur without this result, that I am inclined to think it is to be attributed to some other cause than the mere wound or laceration. I believe that it arises more from constitutional diathesis than the local destruction; that it, in fact, takes place in consequence of the depletion, denial of food, confinement to the house or bed, and severe medical treatment resorted to for the original injury, and especially in subjects previously debilitated, or, as may be said, poisoned by tobacco, alcohol, and perhaps opium, habitually consumed, and living without properly cooked nutritious food, pure respiration, or regular bodily exercise. It has, I believe, been most frequently observed amongst besotted "operatives," and idle young men, who abandon themselves to sensual enjoyments and an irregular life, as well as amongst young persons of either sex, badly fed, clothed, and lodged. Specific constitutional disease, especially scrofula and rheumatism, or even syphilis, are probably predisposing causes, and greatly influence the progress and consequences of the disease. This view is strengthened by the fact that in all injuries of the eye, as well as in operations, the amount and effects of the inflammation are not at all in proportion to the extent of the injury or division of the parts, but evidently depend upon some state of the system which cannot be detected at the time.

The sympathetic inflammation generally comes on in the uninjured eye in about a month or six weeks after the accident, and generally in cases where the injury in the other has been mismanaged or neglected, and where the consequent inflammation has not been subdued, or has returned after subsiding. It is usually of destructive character, and accompanied by effusions, opacities, adhesions, and other disorganizations, causing discoloration and loss of contractile power in the iris, adhesions, and closure of the pupil, cataract, and amaurosis. The surgeon must, therefore, not only give a guarded prognosis respecting it when it does occur, but in all severe injuries of an eye must warn the patient that such a result may follow disregard of proper precautions. It has been observed by Dr. Mackenzie, that this inflammation does not follow operations for cataract, and I have I think found it so, although I cannot say that such is always the case. This is, I believe, because the patient seldom throws off all restraint, or resists all control or treatment, as he often does when he finds that an eye is irreparably destroyed by accidental injury. Inflammation after the operation of extraction, or after the old and destructive operation in which the lens is broken up or depressed through the sclerotic coat, is always treated more or less carefully from its commencement, and thus is the danger of sympathetic inflammation of the other eye diminished. This point is not unworthy of observation when it is recollected how often patients anxiously inquire whether any danger is to be apprehended to the other eye from an operation on the opposite one, and how necessary it is to qualify an assurance of safety in that respect by a warning as to the consequences of exposure to weather or irregularity as to food or habits. Although the prognosis in cases of sympathetic inflammation of the eye must be unfavourable, the surgeon should not despair of success if well-directed efforts to save the organ be steadily continued. It is also to be borne in mind respecting it, that, notwithstanding its destructive effects on the iris and lens, the retina escapes destruction in its progress more frequently, perhaps, than in other inflammations of the eyeball, unless the disease causes total disorganization, with irregularity in form, of the entire globe. I operate for artificial pupil on eyes which have suffered from severe injury, or this sympathetic inflammation, with more confidence than upon those having the pupil closed by the other species of disease.

The treatment of sympathetic inflammation of the eye requires an accurate estimate of symptoms and remedies. There is no empirical or specific cure for it, but rather a judicious dietetic and medical correction of an unhealthy state of the nutritive function. Food of nutritious quality and easily digested should be given in moderation, and removal from the bed-chamber to a well-ventilated room of uniform temperature should be enjoined, if the patient has been confined for some time to one apartment. Even change of air should be resorted to, and gentle exercise abroad, if the season permits. The medical treatment must depend very much on the previous treatment of the inflammation which followed the original injury of the other eye. Depletion by abstraction of blood will not probably be called for; purging, except in moderation and merely for the removal of accumulated intestinal contents, if any such there be, may be necessary; and correction of acidity of the stomach, as indicated by urinary deposit, should be effected. Mercury, if previously given to the extent of affecting the constitution, can scarcely be again administered with advantage, unless a considerable period has elapsed since its discontinuance; its character as a remedy in inflammation, however, stands so high that the practitioner can scarcely refrain from returning to it, should it appear probable that its influence has ceased to operate. If simple debility from interrupted nutrition and severe medical discipline suggest such a course, those preparations of cinchona or quinine best adapted to the stomach and system at large must be given: and if a scrofulous or rheumatic diathesis be present, suitable specific remedies must be adopted. Iodide of potassium should have a fair trial, either alone or in combination with bark, and even colchicum, should there be evidence of rheumatic or gouty constitution. Turpentine may also have a trial. Locally, belladonna smeared on the skin round the eye, and its effect maintained by a lotion containing the extract, may, with safety, and perhaps advantage, be applied; although during the inflammation the iris may not yield to its influence. Blisters to the temple appear to be more efficacious in cases of this kind, where the inflammation is of slow and remitting character rather than active and unabating.

It seems to be suggested, although not perhaps unequivocally recommended, to cause total destruction of an injured eye, when sympathetic inflammation of the other eye ensues. No sufficient evidence is, however, on record of the value of such a violent proceeding, the arguments in favour of it appearing to be founded on the assumption that the removal of a foreign body lodged in an injured eye has prevented, if not arrested, the inflammation of the other; and upon the practice of farriers who, in the intermitting ophthalmia of horses, attempt to save one eye by the destruction of the other. That a foreign body lodged in an injured eye should be removed, even at the risk of producing the deformity which attends total shrinking of the eyeball, there can be no doubt:

if it be visible, the cornea must be freely divided as in the operation of extraction, and the curette or forceps boldly used; and if invisible, even the extirpation of the eye may be necessary. To "lay open" an eye with the view of causing its entire destruction by suppuration, because it continues in a state of irritation or even chronic inflammation, while the other eye suffers from sympathetic inflammation, does not seem to be justified either by theory or practice. Sympathetic inflammation does not appear to ensue from the amount of injury or inflammation of the wounded eye, but rather from a combination of local and constitutional causes, and often comes on after the first mischief has ceased to operate: it is caused, it is true, by the injury and its consequences, but once set up it is probable that it cannot be allayed by any such expedient as this. It is also to be recollected that opening the eyeball to cause suppuration and discharge of its contents, as sometimes must be done in cases of prominent staphyloma, is often followed by most formidable tumefaction and inflammation, involving the entire contents of the orbit; and continuing quite long enough to exasperate a sympathetic inflammation.—*Dublin Med. Press*, March 21, 1849.

---

46. *On the Removal of Osseous Cataract.*—W. White Cooper, Esqr., Senior Surgeon to the North London Infirmary, for diseases of the Eye, relates (*London Journal of Medicine*, July, 1849,) four cases of osseous cataract, three occurring in his own practice, and one in that of M. Desmarres, and offers the following remarks on this affection.

"Ossification of the lens itself is extremely rare. Mr. Tyrrell relates one instance of it, where the capsule was opaque and thick, and contained a mass about equal to one-third of the original lens, hard and brittle, so that it broke on attempting to separate it from the capsule; it was the result of a blow, and was extracted from the eye of a lad of fifteen, who speedily recovered from the operation. A well-marked case is also related by Mr. Wardrop; it was from an eye sent to him by Mr. Allan Burns, of Glasgow. On dissecting back the choroid, the posterior chamber was found filled with a white pulpy mass; and on dividing the crystalline, its central portion was found converted into hard bone. The external laminæ of the lens were soft, those near the centre more consolidated, and the central portion itself of a deep brown colour, perfectly osseous, and exhibiting a laminated structure. Case IV. is another example. And it is worthy of remark that, in two out of the three instances, this remarkable change was the result of a blow upon the eye; of the third there is no history.

"Ossification of the capsule of the lens is the most frequent form of Osseous Cataracts. The character is that of a shell of bony matter irregularly deposited, some parts being thick, others as thin as tissue paper. The colour is yellowish, and when viewed in the eye, appears as if dotted with white paint. For the following analysis of the cataract extracted in Case I., I am indebted to Dr. Hoffman, of the Royal College of Chemistry. "The ash left on incineration was found to consist principally of phosphate of lime; it contained besides small quantities of sulphate of lime, and traces of sulphate of potassa and chloride of sodium. It, therefore, has a very analogous composition to that of bone."

"The agonizing pain caused by these cataracts is of a neuralgic character, being the result of the constant irritation of the iris by the pressure of the hard body. So severe is it at times, that it causes temporary delirium; and I have known two instances in which the patients were driven into the pernicious practice of opium-eating, to drown their sufferings in stupor.

"There is one point in the history of such cases as those I have related, which cannot fail to strike the observer; that, despite of the difficulty and duration of the operation, the amount of violence inflicted on the eye (which far exceeds that of the ordinary operation of extraction), and the diseased state of the organ itself, which might be supposed to render it prone to inflammation, the recovery is, in the majority of instances, rapid and satisfactory. The unusual step adopted by M. Desmarres, of cutting away a large piece of the cornea, is of course an exception; and the alarming hemorrhage described resembles that which occasionally follows the removal of a staphyloma, and is not to be anticipated unless such a proceeding be practiced. It certainly may happen, as occasionally, though very rarely, occurs after extraction, that severe hemorrhage may arise from a branch of the central artery of the retina, but in the three cases of this, with the particulars of which I am acquainted, there was good reason for supposing that a diseased condition of that vessel rendered it incapable of contracting.

"In the performance of the operation, the almost entire obliteration of the anterior chamber by the projection of the lens and iris, renders it extremely difficult to pass the knife across it; in such a case, it would be found easier to direct the incision obliquely. That should be free; and if the cataract knife do not make it of sufficient size, the blunt-pointed sabre knife, cutting on the convex edge, will enlarge it with facility. In the event of the adhesions to the cornea being so extensive as to preclude the possibility of performing the operation in this manner, it may become a question whether an incision directly across the cornea may not be the best mode of proceeding; the object in view is not to give sight, but simply to relieve suffering, and it must be familiar to many, that similar wounds of the cornea inflicted by accident unite kindly if judiciously treated. The great difficulty, however, is the extraction of the cataract. The iris having lost its elasticity, and being bound by adhesions to the lens, and possibly to the cornea, does not yield to pressure; and the lens, being solid, cannot be forced through the contracted pupil, even after the adhesions have been divided, with such an amount of force as can be prudently applied. The better way, then, is to break down the osseous shell and remove it piece-meal, having previously divided the adhesions by sweeping round the margin of the pupil with a fine iris knife. Before placing the flap in apposition, a careful examination should be made, to see that none of the fragments are left. After the lids have been closed, two or three folds of rag, dipped in cold water, should be applied to the eye so long as is felt agreeable, and a full dose of hyoscyamus administered.

"Many persons cannot take any preparation of opium, without subsequent nausea and sickness; and, therefore, hyoscyamus is to be preferred as a sedative after operations on the eye. A tincture, sent to me by Messrs. Taylor, of Vere Street, made from henbane dried rapidly at a low temperature, then placed in hot bottles which are immediately sealed up, possesses so much strength, that thirty drops is a full dose. This I usually administer after eye operations, with the best effect."

MIDWIFERY.

47. *A Report upon the Use of Chloroform in fifty-six cases of Labour, occurring in the Dublin Lying-in Hospital.* By John Denham, M. D., Ex-assistant Physician to that Institution. (*Dublin Quarterly Journal of Med. Science*, Aug. 1849.)—This report contains the results of a series of observations, instituted by Dr. Denham, at the instance of Dr. Shekleton, the present master of the Dublin Lying-in Hospital. The subject was taken up without the slightest intention, Dr. D. states, of making out a case, either for or against the use of chloroform.

The patients upon whom the observations were made were generally healthy, but in no instance were they selected as being likely to prove favourable or the reverse to the use of chloroform; nor was it administered in any case where there was a reason to suspect the existence of organic disease in any vital part. It was given:—

1st. To produce insensibility during operations.
2d. To relieve intensity of suffering.
3d. To quiet particularly noisy patients.
4th. By way of experiment, in ordinary cases, where there was no very definite object in view.

"When a patient in labour," observes Dr. Denham, "is first brought under the influence of chloroform, it will generally be found that the pains are diminished in force, frequency, and duration. After some time they generally regain much of what they had lost, and though apparently weaker, they yet seem to tell with equal or even better effect upon the progress of the labour. The muscles of animal life are first affected, and if a complete state of anæsthesia be induced, the action of the uterus is also impaired. If the chloroform be suspended for a short time, both sets of muscles soon regain their usual power. The effect upon the sensorium is very variable; some pass rapidly into a state of insensibility, while others become boisterous and difficult to manage; but in all who can be induced to use it sufficiently long, it appears to mitigate the feeling of pain, to modify the impression, or remove the recollection of it. The pupils remain natural during the first or excitable stage, but when anæsthesia is fully induced they almost invariably become dilated. Of its effects upon the os uteri I cannot speak very confidently, as we seldom gave it in the first stage of labour; so far as I have seen, however, I believe it does not retard, but rather tends to promote dilatation of it. That the vagina and os externum become relaxed there cannot be a doubt. We did not remark the perineum to yield more in proportion than the other soft parts. In no case did we witness injury to the child, even in the remotest degree."

The cases of *natural labour* in which chloroform was administered in the Dublin Lying-in Hospital, are divided by Dr. D. into three classes:—

1st. The ordinary every-day case, in which the labour was short and comparatively easy, and where the patient would have soon got well whether it was given or not.

2d. Cases where some interference was necessary, and where the chloroform was given with marked advantage, causing the labour to advance, while at the same time it saved the patient from a very considerable amount of suffering.

3d. Cases in which the chloroform appeared to be not only useless, but, when persevered in, positively injurious.

Under the first division, Dr. D. gives a brief outline of *seven* cases of short and easy labour, where the parts being soft and cool, while, at the same time, there was an abundance of room, the patients were "made well" while under the influence of chloroform, with a very happy effect. Five of them denied all consciousness of pain, and several of them were ignorant of the time when their children were born. Doubtless, these women, if left to nature, would have had an easy and safe delivery, followed by a good recovery, and in some the labour would probably have been completed in a somewhat shorter space of time; but, on the other hand, we cannot, we ought not, to conceal from ourselves the fact, that they escaped a considerable amount of pain and mental anxiety, and that they all had good recoveries, without a single bad symptom, either at the time or subsequently.

Two examples are given of the second division of natural labours, in which the good effects of chloroform were more decidedly evident. One of these we shall quote:—

"Case VIII.—Catherine M'Loughlin, aged 18. She had been twenty-one hours in labour before admission; on examination, the head was found low in the pelvis; the pains were almost constant, but the labour was not making much progress, nothing at least in comparison to the severity of the pains, each of which were accompanied with loud screams, and constant complaints of intense suffering; pulse in the intervals only 72. Chloroform was administered, and she was kept completely under its influence from seven minutes after 9 till thirty minutes after 10, when her child was born; in fact, the moment we relaxed in the slightest, she became so violent and unmanageable as at once to require a repetition of the chloroform. I shall give a few of the notes taken at the time: 'Pulse 72, intermitting; stertor in four minutes from first inhalation; in seventeen minutes pulse rose to 94, regular; complete anæsthesia in forty minutes; pulse 120 during the pain; awoke and struggled violently; chloroform resumed at sixty minutes; pains short and strong; at one hour and thirty minutes, struggling violently again, more chloroform given; each inspiration is followed by an expulsive effort; child born in ten minutes after; placenta was soon expelled; no hemorrhage. In half an hour after she was perfectly sensible, and expressed a total unconsciousness either of pain or the birth of her child.' She recovered without a single bad symptom, and went home well on the eighth day."

The patients, Dr. D. observes, in this form of labour, are often of a nervous temperament, with great irritability of fibre. "The delay does not arise from inertia or disproportion, and yet, although the pains are severe and constant, the labour is tedious. The prospect in such cases is by no means cheering; hours of anxious waiting, during which we are importuned by the friends, and perhaps unnerved by the sufferings of our patient, generally ensue. In such cases chloroform will be found a very valuable remedy, particularly when the delay is in the second stage.

"Opiates, it is true, often benefit such cases; but to insure their effect they must be given in large doses, when they generally produce a complete suspension of all uterine action, perhaps for hours, while we can regulate the giving of chloroform so as only to allay the irritability of fibre, and quiet any unusual suffering, without interfering for any great length of time with the progress of the labour. In the cases here given, it will be seen that the pains, while apparently diminished in frequency and force, yet produced a better effect, and hastened on the labour."

Under the third division, Dr. D. relates *five* cases; one of these we will give.

"Case XI.—Eliza Lawler, aged 23; first pregnancy. On admission the os was nearly fully dilated, soft parts relaxed, pelvis normal; pulse 66 in the intervals, 90 during the pains; pains constant and regular. The state of anæsthesia was soon induced, and easily kept up, as she only required four drachms of chloroform in two hours. In twenty minutes after she began to inhale she appeared to be almost in a state of coma; some cold water was then sprinkled on her face. The pains gradually diminished, and at the end of two hours had almost entirely ceased. The chloroform was now discontinued, when the pains again returned with considerable force, and the child was born in half an hour from the time she ceased to be under the influence of it. On being questioned afterwards, she stated that she remembered everything that had been done to her, such as the cold water being dashed on her face, her feet being pricked and tickled, &c.; says that she slept very little during the time, and doubts whether she would wish to have it again or not."

Cases of this kind, Dr. D. remarks, are generally met with among what are termed difficult labours; painfully difficult to the patient, and often distressingly tedious to the practitioner, requiring an amount of experience and patient perseverance greater than any other in the whole range of obstetric practice. It is not deformity, but disproportion, with, perhaps, rigidity of the soft parts in first cases, that we have principally to contend with. The pelvis will be found somewhat under-sized, or the head of the child may be either too large or too much ossified. The advantage to be gained from the chloroform in such cases, will not be found an adequate compensation for the loss of power sustained in the muscles of animal or organic life; and were we to continue its use, I do believe that the patients would remain (doubtless in a state of blissful oblivion) undelivered for hours, or even days. It may, however, be fairly argued,—"why not give it a trial? The delay may, perhaps, arise from rigidity, or some slight amount of disproportion; and even should the pains be weakened, or put a stop to for a time, yet no other injury is likely to arise; while some of the cases given clearly go to prove that the pains, though weakened at first, yet came on more vigorously, and with better effect, after the use of chloroform than before." This we admit; but, confining ourselves to the immediate and direct effects of anæsthetic agents, I think we are warranted in coming to the conclusion that chloroform, if persevered in, will sometimes prove not only useless but positively injurious.

By these fifteen cases of natural labour, we are taught, Dr. D. conceives, that chloroform will be found applicable to many cases, useless in some, and injurious to a few. "I am persuaded," he says, "we have much to learn upon the subject; much to learn (apart from all professional notoriety and eclat) as to when we should begin to administer it, and when refrain from its use; what the best mode of using it, and how great the quantity that may be given, so as to mitigate the sufferings of our patients, and yet not interfere with the progress of the labour;

much, in fact, to learn as to the cases in which it will be found not only admissible, but really useful; not to speak of the question of time, so important, so intrinsically valuable to the medical practitioner. If the question be put,—do you use chloroform in all cases of natural labour? I answer, certainly not; first, because many labours are so rapid, and attended with so little pain, that either it is unnecessary, or there is not sufficient time to produce the desired effect. It not unfrequently happens, that the child is born before the medical attendant can possibly reach his patient.

"Some women object to its use, and unless there be a very urgent necessity, I think we should never press it on an unwilling patient, for, should any untoward circumstance arise, the chloroform will be sure to get the credit of it. In the next place, the cases that apparently require it most,—tedious and difficult labours,—are those where it often appears to be injurious, by weakening the pains, and relaxing the muscles of animal life. But, on the other hand, I must say that I have never met with a single untoward circumstance affecting the health or life of either mother or child, that would in the slightest degree deter me from giving it where I thought it desirable or necessary. I have never witnessed any of the dreadful evils described by some writers as consequent upon its use; I have never seen the blood blackened, or the brain poisoned; nor has it ever, in my hands, induced convulsions, partial paralysis, or other still more formidable consequences; and until it does, I will consider myself justified in still further investigating the subject; ever bearing in mind the maxim of Lord Bacon, that the labours of all who think ought to be to multiply human enjoyment and to mitigate human suffering; and that, for this purpose, we must observe and reason only from what we see."

The next class of cases in which Dr. D. gives the results of his experience, is preternatural labours. If there is one operation more than another in the whole range of midwifery, says Dr. D., in which chloroform is highly useful, it is that of turning; and if the discoverer of it accomplished nothing more, he has by this alone conferred a great benefit upon mankind, and largely earned the gratitude of his profession.

Dr. D. gives the brief detail of *ten* cases of turning, and states that he scarcely feels it necessary to make any observations, so well do they themselves testify to the good effects of chloroform in all such cases; and the master of the hospital is so completely impressed with the value of chloroform, that he administers it before turning as regularly as he should employ the perforator before extracting with the crotchet.

Crotchet Cases.—Of these, *twelve* are given. The necessity, says Dr. D., of using chloroform, is not so great in these as in forcep cases; neither, perhaps, are the advantages so obvious, as the operation can generally be performed without much pain to the patient, and, in careful hands, with a very small amount of danger; at the same time, when we take into account the mental anxiety inseparable from such an occasion, and when we reflect how injurious any shock, mental or bodily, may then prove, I feel assured that we will seldom err in using chloroform, and that in the great majority of such cases it will be found a valuable adjunct in rendering the patient more manageable and the operation more easily performed, independent of any advantage it may possess with reference to ultimate recovery. In two of the crotchet cases, the patients were attacked with puerperal fever, one of whom died in hospital, and the other was forcibly removed by her friends.

The effect of the chloroform in one case of deformed pelvis, was very striking. It was not given until great difficulty was experienced in bringing down the head with the crotchet, the patient at the same time complaining greatly of the pain produced by the traction. At this stage of the operation she was thrown into a state of anæsthesia, after which the head was brought down with about one-half the force that had been previously used, and without any pain to the mother. The rapid recovery of the patient proved that no undue force had been used, and that the soft parts had not been injured. In none of these cases was there hemorrhage to contend with, nor did any untoward symptom arise, either at the time of the operation or subsequently, that could be ascribed to the chloroform. There is one other point to which Dr. D. directs attention to, namely, the giving of ergot with chloroform. In some of the cases this practice was adopted, and in one or two with marked effect, as it produced a decided increase in the pains, though not sufficient to complete the labour. The same practice was adopted in other cases, not now under consideration, with the best results; and in no case did it seem to do harm. Combining ergot of rye with chloroform may, therefore, be considered both safe and judicious where circumstances call for it.*

Forceps Cases.—Dr. D. gives a rapid outline of *seventeen* forceps cases in which chloroform was administered, and states that not only were the operations facilitated, but the sufferings of the patients greatly diminished by its use; while the recoveries on the whole were above the average in such cases. In the two first-mentioned cases, either from the chloroform not being good (its purity being a most important point to attend to), or from our want of experience in the mode of administering it at the time, the patients were not got into a state of perfect anæsthesia before the operation; considerable difficulty was therefore experienced from their restless opposition while in a state of semi-insensibility. In one of the twin cases, there was an attack of hemorrhage after the expulsion of the placenta; but this Dr. D. does not think could be ascribed to the chloroform. In the other twin case, there was great difficulty in bringing down the head of the first child, a footling, and there was a considerable interval between the birth of that and the second. Was the chloroform the cause of this delay? Doubtless in some cases the pains are diminished in frequency and force, and may even be completely put a stop to during the state of anæsthesia, but they generally return with increased vigour as soon as the state of insensibility passes away. In the present case, the chloroform was discontinued from the birth of the first child, until the forceps were about being applied to extract the second.

There is only one death to record, that of M'Mahon, who died from puerperal fever, on the fifteenth day after delivery. Her removal from hospital contrary to the wishes, nay the entreaties of the master, doubtless hurried on the fatal event. This unfortunate female was the victim of seduction; it need scarcely be observed how susceptible of disease such females are, and how almost invariably fatal this disease proves to patients under such circumstances.

Of the children,—where ergot had been given,—one, a twin, was still-born. Two of those born alive died in hospital, one on the fifth day, the child of a woman who had also taken ergot and was fifty hours in labour. The second was the child of a patient who left the hospital in puerperal fever; it died on the eighth day. A review of the cases given will, Dr. D. thinks, prove, even to the most skeptical, that chloroform is not only admissible but highly beneficial in forceps cases.

Convulsion Cases.—Of these, three are related, the only ones in which Dr. D. has used chloroform. His object in giving it in these cases was not to prevent or put a stop to the fits, but simply for the purpose of mitigating the sufferings of the patients, or advancing their labours. In the first case it was given with the view of saving the patient the fear and pain incidental to all forceps operations, and in this it succeeded admirably. The second case, Dr. D. says, "is one of considerable practical interest, but I shall confine myself to the subject in question, namely, the giving of chloroform. That it did not induce the convulsions is evident, nor did we ever meet with a case where such a result could be attributed to it; although many theorists have set it down as a consequence likely to follow. It did not put a stop to the fits, but it certainly served, in the first instance, to control them, at least for a time. I do not say that it lessened them either in number or intensity, nor can it be said on the other hand, that it favoured their continuance, or tended in any way to the fatal result. In the third and last case mentioned, chloroform was given with the view of relieving the great distress complained of, and of relaxing the soft parts. These two objects were in a great measure accomplished during its employment; for although the pains greatly diminished while the patient remained in a state of anæsthesia, and entirely ceased during the interval of sleep, yet they were all the more vigorous afterwards, and literally accomplished more during the last three hours than had been effected in the twelve preceding ones. The whole history of the case tends to the probability that the chloroform had nothing to do with producing the fits, nor was it, I feel convinced, in any way the cause of death.

---

* Since this paper was read before the Obstetric Society, Professor Beatty confirmed the value of the practice by reading some cases of a similar nature to the Society.

"These cases, I think, do not afford any evidence that chloroform is calculated to bring on convulsions, nor that it will increase the number or add to the severity of the fits when they have already set in. Our experience is as yet too limited to enable us to decide upon this point; but, with our present amount of knowledge, we would neither recommend it as a preventive or a cure for puerperal convulsions. If there was no organic disease present, nor any determination to the head in the intervals, we would not fear to administer it where circumstances seemed to indicate its use, or when called upon to perform the operation of turning, or delivery by instruments in a case complicated with convulsions."

This report, which bears the marks of candour and ability, justifies, its author conceives, the following conclusions:—

1st. That chloroform is a most valuable agent in all turning, forceps, and crotchet cases.

2d. In some cases of natural or difficult labour, it is useful in relieving pain, and in relaxing the soft parts, and thereby advancing the labour.

3d. If given in large quantities, or if persevered in too long, it puts a stop to all muscular action. This is contrary to the opinion of Dubois, who states that it never destroys the uterine contractions, or those of the abdominal muscles.

4th. In such cases, the pains generally return with increased force when the chloroform is discontinued.

5th. It does not relax the perineum more than the other soft parts. Dubois states that it does.

6th. When organic disease does not contraindicate its use, there is little danger to be apprehended from it in midwifery practice.

7th. Chloroform may be administered to such a degree as not to take away reason and consciousness, and yet to secure the patient immunity from pain.

---

48. *Difficult Parturition.*—Dr. Burden, Professor of Midwifery, read before the Belfast Medical Society, a paper on difficult parturition, which was rendered very interesting by the introduction to the notice of the Society, of two modifications of obstetric instruments which the author had designed. The following is an extract from this paper, which includes a description of the instruments and their applications. After alluding to several causes which impede the progress of parturition, and to the usual means adopted, the author thus introduces the result of his own reflections.

While attending latterly some natural but protracted cases, my thoughts often turned towards some safe means of shortening such labours.

In one, the head was so placed that its longest diameter was on the brim of the pelvis, but it did not press along the whole circumference of it, for the top of the finger could easily pass between the symphysis pubis and the head. This occupied space was felt to be about one inch broad.

In a *few* such cases, I have succeeded in lowering the occiput with a finger alone, and thus placing the shorter sagittal diameter within the brim, but in general, the finger is not strong enough, nor can it reach sufficiently high to obtain a proper hold, and the common lever is too large to pass up without pressure on the passages.

When the head is at the outlet, I have then also observed, that in every case there was about one inch of space somewhere between it and the pelvic bones. Thus, then, whether at the brim or at the outlet, an inch of unoccupied space generally exists between the head and the pelvic bones. This being ascertained, it was an easy matter to suppose that a lever, which had but one inch of breadth, could be applied in any case without difficulty or giving any pain.

The one which is on the table is, in every respect, like Lowder's, except that at the broadest part of the blade it measures only one inch. Its small size, however, diminishes its power, and therefore it is useful in such cases only as I have described, which require but a small degree of force, but these are the most numerous.

When the head is still on or within the brim, and the vertex too high, this lever being so small can easily, and without any pressure of consequence on the passages, be carried up along the symphysis pubis, and placed on the occiput, and the vertex drawn down. If stoppage be at the outlet, this instrument can be still more readily introduced between the head and ramus, where they are not in contact.

Thus, it will be perceived, that from the smallness of the instrument, it can be used without the slightest risk to the patient, for as it goes through unoccupied space, it can cause no pressure, or require any force for its introduction; and where there is neither pressure nor force, there can be no contusion or laceration. Instead, therefore, of allowing a patient to suffer for hours or days, we may, in many cases, relieve her without danger with this instrument in a few minutes.

It has been said that, while the pains are weak, to partially empty the uterus might occasion hemorrhage. This fear is altogether imaginary, no hemorrhage ever occurred by a portion of the child being taken out of the uterus. In arm presentations a part of the child gets out, and no hemorrhage takes place. In cases where a large anodyne is given, the membranes ruptured, and feet and legs brought down, a large bulk is thus taken from inside of the womb, without being followed by hemorrhage; but, on the contrary, the uterus is often partially or wholly emptied in the absence of pain, to stop hemorrhage, as where bleeding takes place from the uterus before the commencement of labour. The membranes are then ruptured for the purpose of arresting hemorrhage, liquor amnii escapes, the walls of the uterus fall in, it contracts, and the bleeding ceases. There can be no hemorrhage while the placenta is wholly attached to the uterus.

Since this lever has been made, only one opportunity has occurred for trying it. In that case, at half past 10 A.M., the womb was only beginning to open. It being the first pregnancy, and no symptoms of quick labour present, strict attention was not required. On my return at 1 o'clock, the womb was almost open, the pains had been strong, but on my re-appearance they almost ceased, being so weak that each one appeared to be but one abdominal effort, and then it was gone. This continued for some time, the womb remaining in the same condition. The os being soft and dilatable, no difficulty was experienced in pushing it over the head. Two hours after this, finding no progress made, and the occiput high up, the small lever was introduced. It was applied without either the patient or those about her being aware that this was done. The occiput being lowered, the instrument was withdrawn, and although the pains remained without improvement, yet the head kept slowly descending, and the child was born at half past 4 o'clock.

In this case, the child was small, and no doubt the pelvis was capacious; and if, when the pains continued weak for so long a time, an anodyne and some refreshment had been given, it is most probable that, when the strength had been remitted, efficient pains would have commenced and delivery accomplished by the natural efforts; but in the mean time the patient's sufferings, and the anxiety of her attendants, would have been prolonged and increased; whereas, this small lever was so placed that the labour was enabled to progress steadily, and, in one hour after its use, delivery took place; and this, be it remembered, with such weak pains that the patient scarcely felt them.

This was the first time I have ventured to use any instrument without first informing the friends, and in almost every instance, the patient herself. At the next visit, however, the operation was mentioned, and the reason given for not doing so at the time was this; that so little was required to be done that it was not worth mentioning, and the mere naming of an instrument would have created an alarm.

When the difficulties in the way of labour are still greater, so that a full-grown child's head cannot get through the passages, it becomes necessary to lessen it.

Before resorting to this most disagreeable operation, lever and forceps are first tried; when these fail, and (as some practitioners do) the patient is allowed to go on until the pulse rises and the passages become dry, hot, and painful, then delay can no longer be warrantable, even the accoucheur most averse to operations cannot now hesitate; if we are to act at all, no more time must be lost. The child's head must be opened and the brain taken out.

Opening the head, and breaking up and scooping out the brain is an operation easily performed. The difficulty lies, when this is done, in extracting the child. In such cases, there is seldom any assistance from labour pains; still the head being now of small bulk, much less than the passages, cannot throw any difficulty in the way of abstraction. The resistance is from the passage of the shoulders through the brim, but this is comparatively little, for, as the shoulders are movable, no great force is necessary to bring them through. The whole difficulty, then, consists in our being unable to use any considerable extractive power from the imperfection of our instruments.

As to the hook, it is very difficult so to fix it within the child's head as to allow of the exertion of any considerable strength; it very frequently slips, endangering the passages of the mother and the hand of the operator.

The crotchet is so fearful-looking an instrument, that I have never had the courage to use it. Even Davis's double-bladed crotchet does not answer the purpose well, for whatever part it takes hold of it tears away.

The craniotomy forceps I have latterly depended most upon. It is somewhat difficult to fix, and when properly placed, it merely, like Davis's instrument, tears away a portion of the scalp, or breaks off a small piece of bone. It requires to be fixed perhaps ten or twelve times before extraction of the head is accomplished; and with all the caution that can be used, the patient can scarcely escape being scratched by the rough edges of the small piece of bone detached from the head of the child.

Having met with two craniotomy cases in one week last winter, and experiencing the imperfection of the instruments now in use, I began to consider whether a better plan of extracting the child could not be devised. The first thought was, to provide two steel rods with a hole in one end of each, with these to place a tape round the neck of the child; but pulling all at one side it might be feared would, instead of drawing the head forward, only send the top to one side, and then the whole force would be on a cervical vertebra. Two such ligatures were then thought of and intended to be used on the next opportunity. Further consideration, however, produced the idea of a pair of strong forceps.

After maturing the plan, the strength and form of the instrument were explained to Mr. Bell of Corn Market, Belfast, who, after much pains and comparatively little cost, beautifully manufactured the instrument before you. It is more like a double lever, each blade is made very strong, that it may not have so much elasticity as to permit the points to separate far enough to slip over the head. When locked, the space between the blades, in which the head is enclosed, is much smaller than in ordinary forceps, being only two inches and a quarter. The head, after having been opened, is much smaller and does not require so much room. The nearer proximity of the blades has these advantages; the instrument does not press on the sides of the passages, and still further lessens the child's head; when locked, you will perceive that it has at the end a circular opening—in this, the neck of the child is inclosed.

When the instrument is properly applied, the end of it surrounds the child's neck, and the points rest on the comparatively strong occiput, and upon the strongest part of it. When thus fixed—and in the doing of this there can be no difficulty, as the smallness of the head would allow even a hand to pass over it—the operator has full command, and can extract as he pleases, without any difficulty to, or risk of wounding himself, or any fear of lacerating the passages of the mother.

Such is the instrument I was desirous of showing to you. Since it was made, no opportunity has occurred for trying it; it may, therefore, be considered as but a theoretical instrument at present, and no surety can be given for its usefulness till it has been put to the test of experience. All that can be said of it at present is, that, if it fulfil the promise its appearance holds out, it will be a most valuable addition to our stock for craniotomy operations.—*Dublin Medical Press*, June 20th, 1849.

49. *Case of Uterus Bicornis.* By Dr. Generali.—The following case long excited great interest at Modena, being believed to be an undoubted one of superfœtation, an opinion indeed, which the subsequent post-mortem examination does not entirely set aside. Gaetena Boratti had borne six children, all at their full time (the hand having to be introduced for the removal of the placenta on each occasion), and was delivered of her seventh, a full-timed vigorous infant, on the 15th February, 1817, the placenta on this occasion being spontaneously discharged. The pains ceased, but the abdomen still remained large, and the movements of another fœtus were perceived. The tumour was confined to one side of the abdomen; and before the birth of the first child, a furrow along the median line seemed to separate the tumefaction into two parts. On the 14th March, a second well-formed child was born. The first child lived 45, the second 52 days. In 1822, she had another child at full time. In 1847, she died of apoplexy, and the uterus, normal in respect to its os and cervix, was found to be bicornuated at its fundus, a Fallopian tube being inserted into each of its cavities. The preparation is preserved in the museum at Modena.—*Brit. and For. Med.-Chirurg. Rev.*, from *Bulletin delle Scienze Mediche,* vol. xiii. p. 89.

50. *Extra-uterine Fœtation—Gastrotomy.*—The particulars of this remarkable case, were related by M. Tueffard to the French Academy of Medicine.

The patient, a little thin woman, æt. 40, had been pregnant five times previously to the present illness; of these pregnancies, four ended in premature labour at seven months; the fifth arrived at full term. The extra-uterine was the sixth pregnancy. The fœtal movements were very perceptible up to the sixth month, when, after exertion, the patient felt the child suddenly start up towards the left hypochondrium, and then fall back again in the iliac region of the same side. She had, at the same time, violent abdominal pain and considerable hemorrhage. From this time the fœtus ceased to move, and the body diminished in size. Her symptoms afterwards were frequent and copious hemorrhages of periodical occurrence; in the intervals, excessive abdominal pain. When seen by the author, these symptoms had continued for six months. He discovered a tumour above the right groin, in which it was easy to perceive the form of the fœtus. The os uteri was healthy and closed, the cervix of its natural size, and the whole organ was movable. The patient being very anxious for an operation, after the inhalation of ether, the author made an incision over the tumour, in a direction parallel to the linea alba. After dividing the skin, muscles, and peritoneum, he came upon a whitish membrane, forming a cyst, and containing a matter very similar to adipocire; below this was another cyst, which contained the limbs and trunk of a fœtus, the head and upper extremities having escaped into the general cavity of the peritoneum, to which they had contracted firm adhesions. Further examination showed that the fundus of the uterus was destroyed, the cyst containing adipocire being closely adherent to, and forming one cavity with the uterus; the cysts were removed, and the abdominal incision closed by interrupted suture. As the vagina communicated directly with the peritoneal cavity, it was not necessary to insert a tent into the lower part of the incision, the discharges being enabled to drain off *per vias naturales.* The subject of this extraordinary case is said to have perfectly recovered.—*Ranking's Abstract,* vol. ix.

51. *Retroversion of Uterus during Pregnancy.*—M. Van Heugel relates a case in which spontaneous reposition of the uterus took place, after emptying the rectum and colon of an immense quantity of impacted fæces.

A young woman, three months advanced in pregnancy, experienced great difficulty in making water, with pain in the abdomen. On examination, the os uteri was found under the pubes, and the fundus projected upon the sacrum, and depressed into its hollow. The urine was drawn off, and a large enema was exhibited by means of a tube, which was passed up to the sigmoid flexure;

an enormous quantity of scybalæ were thus removed, and, upon a subsequent examination, it was found that the fundus had resumed its natural situation.—*Ranking's Abstract*, vol. ix., from *Revue Méd.-Chirurg.*, Sept., 1848.

52. *Apparent Intra-Uterine Amputation.*—Dr. Ludwig Melicher, in the *Oesterreichische Medicinische Wochenschrift*, for April, 1848, relates the following interesting case: Joseph G——., 12 years of age, a pupil in the Imperial Grammar School, born of healthy parents, was the fourth child, and one of seven brothers and sisters, all born healthy, and well made. His mother states that she suffered no accident of any kind during her pregnancy with this child. He had always been healthy, with the exception of an attack of typhus three years ago. He is well formed for his age, his limbs of average proportions, except the left upper extremity, which presents the following unusual appearance—viz., a congenital entire deficiency of the lower two-thirds of the left forearm and hand. It appears at first sight as if amputation had been performed, but that such is not the case is evident from the presence of five little rounded elevations on the end of the stump, representing the fingers; one of them the size of a small pea, and furnished with a rudimentary nail, was separated from the others by a deep line, and corresponded to the thumb; the rudimentary fingers are about the size of hemp-seeds; they are soft, and contain neither cartilage nor bone. When the stump is bent, they become very distinct. On the internal and on the external borders of the stump, close to those elevations, are two funnel-shaped depressions. The stump itself has the appearance of a nine-pin flattened, its base at the elbow-joint measuring two inches; its apex is one inch and a half in width; its length is two inches and three-quarters. It is soft and spongy to the touch, as if padded with fat, and, on closely examining it, two bones may be distinctly felt; one corresponding to the radius, the other to the ulna. The elbow-joint is normal. The internal and external condyle, and also the olecranon, can be distinguished. Flexion and extension of the stump of the forearm are perfect, but pro and supination cannot be freely performed.

Through the unnatural mobility of the shoulder-joint, circumduction of the flexed or extended stump is rapidly performed, and by these means he is enabled to assist himself, and perform therewith the most varied actions;—*e. g.* he can by its employment withdraw the bolt of a door, and open it; he inserts the flexed stump into the handle of a basket, and readily moves it. The stump possesses in this manner considerable strength, so that he can drag along heavy weights. In cutting paper he holds down the paper with the bent stump, while he cuts it with the knife held in the hand of the other arm. He holds the paper in a similar way while writing; he can tie a knot, put on his cravat, and dress himself without any other assistance. He can even mend a pen without difficulty; holding the feather end in the bend of the elbow, and cutting the quill with the hand. He further aids the stump by the use of the shoulder-joint and knee. Thus he in many ways compensates for this unfortunate deficiency.

Dr. Melicher very justly regards the preceding deformity as an arrest of development, and as confirmatory of the theory of the centrifugal growth of parts. He refers to the reports of similar deformities by various authors, accompanied with defects of other limbs or organs: and he gives, with engravings of the preceding case, a drawing of a case which he saw in Vienna, where the forearm was replaced by three fingers. The child died at the age of three months, of hydrocephalus acutus. On examination of the arm, it was found that the biceps was divided at the elbow into three strips, which moved the fingers anteriorly; posteriorly they were moved by prolongations of the triceps.

A reference to the recorded observations of authors leads Dr. Melicher to divide cases of intra-uterine amputation into (1) the real, and (2) the apparent.

1. The cases of *real* intra-uterine amputation may again be divided into perfect and imperfect. Perfect intra-uterine amputation has been traced either to entanglement of the limbs with the umbilical cord, or to inflammation and sphacelus of the limb or limbs. Imperfect amputation may arise from a similar entanglement of the cord, cutting into, but not dividing the member; and under these circumstances inflammation may be set up, producing deformity, or end-

ing in spontaneous amputation, as in those rare instances where the amputated limbs or parts of limbs have been expelled detached from the trunk.

2. *Apparent* intra-uterine amputation belongs to that class of malformations which consist in an arrest of the growth of a portion of the organism, while the remainder proceeds in its normal development. Such is the nature of the preceding and a few other analogous cases which have been put on record.

Dr. Melicher has brought together most of the names of the authors who have recorded these cases. We add the following, which we find recorded in the *Medical Times* of Nov. 19th, 1842, by Mr. W. B. Kesteven, under the title "Effect of Maternal Imagination on the Fœtus." It has escaped the notice of Dr. Melicher most probably from the objectionable heading under which it was recorded; as it appears to us objectionable, from its assuming, as an explanation of the cases, a theory which is regarded by physiologists generally as destitute of foundation. Dr. Melicher's title, "Apparent Intra-Uterine Amputation," at once points out the characteristic features of the deformity, and avoids any inference of theoretical causes.

"An infant presented on the left upper extremity, a mere stump of about two inches in length, beyond the elbow-joint, terminated by a puckering of the integuments on which were situated five minute bodies resembling the tips of very small fingers; the child was otherwise perfectly formed. The history of the case is as follows:—

"Eight months before the birth of the child, the mother, walking with her sister (from whom I have collected the particulars), met with a beggar who, in order to excite compassion, exhibited an amputated stump on his left arm. The woman immediately expressed a sense of disgust and horror, and observed that, if she had been then pregnant, she would expect that her child would be born similarly maimed. The sequel has proved that she was then pregnant, though she did not apprehend it, and that her fears of the result were too well grounded.

"Her sister was present at her labour; and on receiving the infant, and discovering its deformity, experienced a thrill of disgust and sorrow, from which she did not recover until a few days after, when I was called to attend her for abortion, she not having previously suspected that she was pregnant.

"A few days ago I was called to attend, in her second labour, an intelligent, respectable young woman, the wife of a plumber residing in Hornsey Road, opposite to the first-mentioned woman. The child, which is otherwise perfect, presents a deformity precisely resembling that above described, with the exception of two imitations of finger ends instead of five, as in the former instance. I have collected the history of this case from the sister-in-law, the husband, and herself. About eight months since she was subjected to exactly the same circumstances as those I have related in the other case; she also did not suppose herself to be then pregnant, but expressed the same extreme sense of aversion, and her fear that, 'if she had been *in the family way,*' the infant would be similarly maimed.

"In both these instances the same dread of the result had been expressed during the period of gestation; and I have reason to think, though of course I cannot prove it to my satisfaction, that the same individual vagrant was the cause of alarm to each."

The subject of this case is, we understand, alive, and is a most intelligent and active lad, making as much use of his stump as the boy mentioned by Dr. Melicher.

The more extended researches of Dr. Melicher, with more correct views of medical reasoning, while they lead to a collection of facts, supply at the same time the grounds of a more rational explanation, than is furnished by popular ignorance. It is only thus, by the accumulation and comparison of carefully recorded observations, that pathological morphology will be enabled to explain the hitherto complicated and seemingly mysterious occurrence of monstrosities. This branch of medical science will by such researches be removed from the realms of imagination, and take its place under the rule of sober facts and severe reasoning. It is here worthy of notice how one false assumption or hasty generalization leads to other erroneous conclusions. It has been by many writers on teratology laid down as an ascertained truth, that such malformations as are noticed in the preceding extracts can only occur in the early weeks of pregnancy, and that they may be the effects of emotions in the maternal mind. The explanation which further experience affords, that these deformities are to be attributed to pressure by the cord, disproves the first conclusion; for the cord may become, and is necessarily more likely to become, twisted round the limbs at a later period when the limbs are formed, than at an early period when they are but rudimentary; and to the second conclusion, facts lend but a doubtful support.—*Lond. Med. Gaz.*, July 27th, 1849.

---

53. *On Hemorrhage from the Umbilicus after the Separation of the Funis.*—Edward Ray, Esq., read before the *South London Medical Society,* an interesting paper on this subject, embracing the details of a number of cases. His object, he says, in detailing these cases, and collecting others of umbilical hemorrhage occurring some days after the separation of the funis, is to demonstrate the peculiar disposition this kind of hemorrhage has to attack the male sex only, and its liability to occur in a succession of male children from the same parents. He is also particularly desirous to receive from the profession any facts relative to this somewhat rare affection, or suggestions that may tend to the more successful prevention or treatment of it.

A lady aged 32 years, was attended by Mr. R., in her sixth confinement, on the 1st of May, 1845. After her marriage (1834) she was thrown from a chaise and bled largely from injuries then received: her first child, a female, was born June 19th, 1835; the mother attempted to nurse, but from extreme debility was obliged to give it up entirely to a wet nurse after a few days: the child was strong and healthy, and is now living.

Second child, a male, born December 1st, 1836, was feeble from its birth, jaundiced, refused both breast and food: hemorrhage occurred from the navel some days after the separation of the cord, and the child died on the 19th day after birth.

Third child, a male, was born on December 19th, 1837, and appeared to be strong and healthy at birth; was nursed by mother in the day and fed in the night; became jaundiced; some days after the separation of the cord, the child was found to be faint after coughing in the night; umbilical hemorrhage had occurred, and he died on the 11th day after birth.

Fourth child, a female, born May 26th, 1839, was nursed by mother two hours during the day, and fed at night: now living and healthy.

Fifth child, a female, born May 2d, 1842, was nursed by mother 16 months during the day, and fed at night: has been healthy, but has now emphysematous lungs subsequent to hooping-cough.

"Sixth child, a male, born May 1st, 1845, after a very short and natural labour, well formed, and apparently strong and healthy: the meconium passed naturally: on the third day the child was jaundiced, and Mr. Young, of Kennington, who had previously attended this lady, most kindly called upon and informed me of the mode of death of the previous male children, and expressed his conviction that this child would die also from umbilical hemorrhage, and supplied me with Ruspini's styptic to attempt its arrest. On the 4th day, the evacuations being scanty and almost void of colour, I prescribed hydr. c. creta, gr. iss, c. conf. aromat. gr. iij, and followed it by small doses of rhubarb in aromatic form occasionally, with the effect of producing three or four evacuations in the 24 hours, of slightly improved colour. On the sixth day, the cord separated from the umbilicus; there was nothing to remark beyond the jaundiced and somewhat inactive state of the child. From this time, I undertook the dressing of the navel, and applied night and morning zinc ointment dusted freely over with powdered matico leaves. Suspecting the mother was not a good nurse, a wet nurse was with some difficulty procured. A small granular point alone remained unhealed *within* the umbilical pit on the ninth day. On the morning of the tenth day a slight stain of blood was seen, on the dressing being removed from the umbilicus; the under surfaces of the matico leaves were now applied over the umbilicus, and a compress over them. At 3 P.M. I was sent for, the child being faint, and found, on removing the bandage from the abdomen, that the compress was sodden with blood: firm conical compresses of lint were made so as to fit *into* the umbilical depression, and firmly retained after being moistened with Ruspini's styptic, but did not appear much to control the hemorrhage; one wetted with oil of turpentine was then similarly applied, and to all appearance checked it, but in less than two hours it recurred, and it was evident to Mr. Peppercorn (who was present) and myself, that pressure, with or without styptics, could not be depended upon for controlling it: on watching the blood, as it was seen to ooze in a fine, undulatory stream from left to right, and in a direction upwards, showing that it proceeded clearly from the left umbilical artery, it was of a very light vermilion colour; coagula were scarcely traceable on the linen, &c., which had more the appearance of being stained by a thin-coloured fluid, than the usual stiffened stain of blood. We decided upon encircling the umbilicus with a double ligature introduced by a curved needle, but were shortly after compelled to surround it with a single ligature, as the blood began to ooze after a few minutes from the needle's punctures; this effectually controlled it, but the child was already blanched and losing temperature; it was now kept warm and quiet, and frequently supplied with small quantities of breast-milk with a spoon, as it had not the power to suckle. On the 11th day it was still weaker; no return of hemorrhage; could not suckle; nutriment could be got down only in very small quantities; two small petechial spots on the left arm; skin yellow and cold; child quiet, and breathing almost imperceptible; motions of pasty consistence and almost white. Ordered beef-tea and milk to be administered if possible, beef-tea enemata, and small doses of sesquicarbonate of ammonia sheathed in mucilage every hour. The child continued gradually to sink, and died on the 12th of May, the 12th day after its birth, 6th day after the separation of the funis, and in about 46 hours after the commencement of the bleeding.

The examination was conducted by Mr. Hilton, 26 hours after death. The body was full eighteen inches in length, weight nearly 7 lbs., skin jaundiced, conjunctiva slightly so, two purpuric spots on the left arm, abdomen tympanitic, testes descended.

Abdomen.—Muscles pale; peritoneum perfectly free from all evidence of any previous inflammatory action; the peritoneal surface of the umbilicus prominent, or bulging towards the spine, and indistinctly fluctuating; its colour darkened. The stomach externally had a marbled appearance: it contained about three ounces of beef-tea and milk; its internal surface was covered by a ropy brownish substance (blood acted on by gastric juice), which gave the peculiar stained or marbled appearance noted externally. Intestines, although natural, were here and there slightly reddened in the more depending portions; mesenteric glands numerous. Duodenum, jejunum, and ilium, contained but a small quantity of paste-like matter; the contents of large intestine trivial, and but slightly tinged with bile. Spleen of natural colour, large, soft, and fleshy; branches of splenic vein impervious. Pancreas normal. Liver of normal size, of olive brown colour; the acute margin ecchymosed. Gall-bladder not distended, but contained some mucus tinged with bile; the cystic, hepatic, and common ducts natural and pervious. Hepatic artery and branches normal. Splenic, mesenteric veins, and the portal vein, with its right and left branches, all pervious. The sympathetic branches beautifully seen in Glisson's capsule. The umbilical vein and venous duct open; the venous duct narrowed and somewhat funnel-shaped, being widest at its caval end. Inferior cava and hepatic veins open. Kidneys, ureters, and bladder normal. On inflating from the common iliac arteries (the femoral arteries being closed by temporary pressure), both umbilical arteries were found to be open as far as the umbilicus; but on the ligatures which had been applied during life to stop the bleeding, being removed, air did not escape from either artery at the umbilicus, nor did any air escape from the umbilical vein when inflated, yet a very fine probe passed readily through the vessels, and appeared at the umbilicus; the *left* umbilical artery was the largest, and contained a fine string of fibrine and a little fluid blood; the right umbilical artery contained neither blood nor fibrine, and the umbilical vein was empty.

Chest.—On opening the chest, the lungs did not collapse; both lungs were jaundiced, and presented numerous ecchymosed spots, especially on their posterior portions; a small quantity of yellow serum in each pleural cavity. Thymus and thyroid glands healthy. Phrenic nerves normal. Pericardium contained about a drachm of yellow serous fluid. Heart pale; right ventricle contained a little fluid blood; pulmonary artery and its valves normal. Ductus arteriosus cylindrical in form, size of a large quill; a probe passed without any obstruction from the pulmonary artery to the aorta; parietes of the duct thickened, more dense in structure than the aorta or the pulmonary artery, its inner surface corrugated longitudinally. The right and left pulmonary arteries natural, their openings larger than that of the ductus arteriosus. The auricles empty; the foramen oval tubular and valvular. The left ventricle contained but very little fluid blood; there was no fibrine in any of the heart's cavities. The aortic valves, three in number, one large and two small; the openings of the coronary arteries were covered by the smaller valves. The aorta normal in form and structure; its lining membrane yellow, and the blood in it fluid. Thoracic duct pervious, and contained a very small quantity of pellucid fluid. Splanchnic nerves normal. Thoracic ganglia and sympathetic nerves larger on the right side than on the left. Pneumogastric nerves normal. Vena azygos major normal, containing blood, which was readily pressed into the superior cava.

The umbilical arteries, and the cavity in which they terminate, presented a corrugated or transversely ribbed appearance; this corresponds precisely with what may be usually seen after death in arteries which for some time before death have not contained or transmitted their usual quantity, or scarcely any blood: and as this same condition extends to the dilatation which receives the umbilical arteries, it suggests the probability of there having existed some malformation at that part: a sort of common receptacle, in the form of a dilated artery, into which the umbilical arteries emptied themselves, from which the umbilical vein proceeded, and from which, also, the hemorrhage took place through the umbilicus. It is evident that the usual healthy process of occlusion had not taken place in these umbilical blood-vessels, and the same kind of defect was manifested in the ductus venosus and in the ductus arteriosus.

Whilst attending upon the case related, I heard from a non-professional source of a lady losing her *four male* children from bleeding at the navel, after the separation of the cord: these children, I was informed, came out in purple spots before death, and were attended by the late Drs. Key and Babington. This lady gave birth to two healthy female children, who married, and are supposed to be still living.

As to the mode in which the fœtal vessels become obliterated, I am at present disposed to believe that it is by the gradual contraction of their coats, and not by the formation of a clot within them. In the few children I have had the opportunity of examining under the age of one month or six weeks, I have not detected any trace of a fibrinous plug, but have generally been able to trace a canal in the vessels. I find, upon inquiry, that it is not uncommon for a *little oozing* of blood to occur after the immediate separation of the funis, which either spontaneously or readily subsides with compression; and it is not a little singular that I have seen this *slight oozing* in two *male* infants of an ill-fed poor woman, who nearly lost a former *male* child, from hemorrhage from the funis, occurring some hours after birth. Hemorrhage from the umbilicus I believe to be prevented by the contraction and by the retraction of the vessels (after the separation of the funis), and by the subsequent sealing by granulation and cicatrization. The formation of the umbilical depression is probably aided by this retraction, and some degree of internal traction on the remains of the umbilical vein and urachus being produced by the respiratory movements and distension of the bladder.

The jaundice observed in the cases related appears to me to be deserving of notice. Did it depend upon the partial atrophy of the liver immediately after birth, in consequence of the changes that occur in the circulation on the respiratory functions being established, the liver being then not the sole decarbonizer of the blood, as during fœtal existence; or did it depend upon inefficient nutrition? It is supposed by some physiologists that the presence of chyme distending the small intestine is essential to the uninterrupted flow of bile into it; and if the intestine is empty, the bile accumulates in the gall-bladder and ducts, and may afterwards be re-absorbed into the blood. The presence of bile in the intestine has been proved by Schwann to be essential to nutrition. I have certainly seen jaundice most obstinate in infants inefficiently nursed. A patient of mine, who is never able to nurse more than a few months, has had six children, all jaundiced, and they have rarely lost their yellow skin under two months.

The treatment of umbilical hemorrhage must be directed to the prevention or cure of it.

Preventive Treatment.—Recognizing the theory relative to the influence of the sexes in the reproduction of the species, that the male supplies the seed, and the female the soil or nutriment, I believe that the treatment primarily must be directed to maintain the general health of the mother during the period of utero-gestation; thus to insure, as much as is in our power, the ability to bestow the nutriment so essential to the perfect development and organization of the fœtus; and secondly that we must be prepared with efficient means to supply the child after its birth with the nutriment most natural for it, and from a healthy source, that the assimilating functions may be stimulated and performed. After the separation of the funis I would suggest the application of collodium before applying the usual compress of soft linen, and urge the daily superintendence of the accoucheur: I allude, of course, only to cases where the disposition to this form of hemorrhage is known or suspected.

Curative Treatment.—Should the hemorrhage, notwithstanding our precautions, occur, the administration of one or other of the remedies serviceable in purpura—as steel, gallic acid, &c., might perhaps be of some avail: but mechanical means must be adopted for *immediately* checking it; and in the employment of those means there must be no *delay*—no loss of time by repeating an unsuccessful attempt, as every drop of blood is of vital importance to so young an infant. Should such a case occur to me again, I should first attempt to control the bleeding by pinching up the umbilicus between the finger and thumb in the same manner as I should pinch up the integuments to control the bleeding of a leech bite, maintaining that pressure, if successful, and coating the umbilicus, first filled with cotton wool, over with collodium, or employ plaster of Paris, as suggested by Dr. Churchill, if at hand. But, should it not be thus readily controlled, I should produce an eschar by means of a probe, director, or skewer heated to whiteness, coating afterwards with collodium. If unsuccessful, I should then proceed to tie the bleeding vessel, and adopt the mode suggested to me by Mr. Hilton, first introducing a fine probe into the bleeding vessel, to act as a guide for the incision, as well as to diminish, perhaps, the loss of blood. I do not recommend the immediate application of the ligature in these cases, from the impression that they are so allied to the cases reported as illustrative of the hemorrhagic diathesis; and, consequently, deem it possible that hemorrhage of a dangerous, if not a fatal character, might arise from the wound necessary for its application.—*Lond. Med. Gaz.*, March, 1849.

CHOLERA.

54. *On the Pathological Anatomy of Cholera.*—Dr. W. T. Gairdner, in a communication read before the Medico-Chirurgical Society of Edinburgh, and published in the *Monthly Journal of the Medical Sciences* (July, 1849), gives a very interesting account of the pathological anatomy of cholera, founded on the examination of eighty-nine fatal cases, during the late epidemic. In the course of his duties as pathologist to the Royal Infirmary, Dr. G. has had unusual opportunities of contrasting and comparing the appearances in cholera with those presented to his notice in connection with other diseases; and the constant use of this *comparative* method of observation has led him to consider many statements as erroneous, which are generally, and in some cases all but universally, received in relation to this disease. The greatest care has been taken by him, he says, to verify or correct the results obtained by previous observers, more

especially where any theory of the disease appeared to be involved; microscopical analysis and chemical tests have been applied wherever they promised to aid in the investigation; and in regard to such doubtful points as appeared likely to acquire precision by numerical analysis, the results have been preserved in the tabular form.

The bodies opened were mostly from the cholera hospital, being taken at random from those who died under the care of Dr. W. Robertson; a few, however, were from the infirmary. The proportion of females to males was two to one. The average age of the patients was thirty-three, by far the greater number being between twenty and forty. Four of the females were in different stages of pregnancy; but as the greater number of the bodies of females known to be pregnant were given to Mr. Goodsir, by his special request, this number does not give an accurate idea of the large proportion of pregnant cases. Several of the females had been nursing, as was shown by the distended mammæ, which readily yielded milk on pressure. The great majority of the bodies examined were evidently those of persons previously healthy and vigorous. They presented the external appearances, so well known in cholera, of lividity and collapse; the last being caused by the shrinking of the cellular tissue from the absorption of its watery parts; there was, however, no diminution of the fat, which was usually in very considerable quantity on the abdomen and elsewhere. The muscles were of good colour, and usually in strong tonic contraction from the rigor mortis. The more important facts resulting from the examination of the internal organs are embodied in the following conclusions:—

I. *Previous Diseases of those attacked.*—Cholera appears, during the late epidemic, to have attacked chiefly persons in health, or in the retrograde stages of chronic affections; and to have spared almost entirely those affected with acute or actively progressive disease. Appearances of acute disease were chiefly observed when death took place after more or less distinct reaction, and were evidently the *sequelæ* of the choleric affection. The chronic lesions were exactly similar in kind to those most commonly found in hospitals and dissecting rooms, but bore a decidedly lower proportion than is usual to the whole number of cases examined. Thus the lungs had the traces of old disease, in one-sixth of the cases; among which two only (cases of miliary tubercle) indicated progressive disease. The liver presented a chronic lesion in one case; the kidneys in four, of which only two (incipient Bright's disease) were progressive. The uterus and ovaries were frequently more or less abnormal, but the only progressive lesion was ulceration of the cervix, usually quite superficial. The intestines were uniformly exempt from chronic disease. It thus appears that the opinion which has been so extensively prevalent since 1832, that cholera attacks, chiefly or exclusively, individuals of unsound constitution, or bearing the traces of previous organic disease, is not borne out by the facts of morbid anatomy; and in particular, that there is no evidence whatever that previous disease of the intestinal canal pre-disposes to cholera.

II. The *Blood* is much less affected in its physical characters than is usually supposed to be the case in cholera. Its coagulation within the vessels takes place much as in other diseases. In the majority of instances, firm clots are found within the heart, more or less completely decolorized; and the serum or non-coagulated portion contains the greater part of the blood-corpuscles. The colour of the blood presents nothing unusual, the epithets "dark" and "venous" being in no degree more applicable to cholera blood after death than to that of every ordinary form of fatal disease. The remarkable viscidity of the serum (or portion of the blood not involved in the clot) so often noticed, was chiefly observed in cases fatal during the collapse or early reaction; and was certainly owing to the removal of the fluid matter by the intestines. The effect of this, in modifying the chemical constitution of the blood, has been fully shown in Dr. Robertson's researches (*Monthly Journal*, May, p. 764). The microscopic appearances of the blood presented nothing unusual.

III. Much importance has been attached to *Congestion* in relation to the pathology of cholera. But it is an error to conceive of congestion as an essential or universal condition in this disease; for, although the lungs and right side of the heart are frequently loaded with blood to a considerable extent, the liver, spleen, and kidneys are, in most cases, paler than is usual in other affections. The intestines present every shade of colour from the palest to the deepest. The uterus and Fallopian tubes are generally loaded with blood. The venous system of the brain, and indeed the great veins generally, are also in most instances full. But such appearances are very common in other forms of fatal disease.

IV. A tendency to *Ecchymosis* in various situations was certainly characteristic of cholera to an extent not common in other fatal diseases. These ecchymoses seldom occurred externally, except in one situation, viz.: beneath the conjunctivæ of the eyes, which were very commonly more or less bloodshot. Among the internal organs it was more frequent on the intestinal mucous membrane, especially of the colon, than in any other situation; but very frequent also in the form of petechiæ on the posterior surface of the heart, and occasionally in other places, as the cellular tissue surrounding the cervical vessels, and in that around the dura mater of the spinal cord. Perhaps there were other situations in which ecchymoses might have been found on examination; but in the above it was so frequent, that in only six out of twenty-six cases was it not found in one or more of them.

V. The *Glandular Secretions* in cholera are probably more or less diminished in quantity (although there are no very precise observations on this point); and they appear also, from the observations of Dr. D. Maclagan* on the milk, and of Dr. J. W. Begbie and other observers on the urine,† to undergo great alterations as to quality. But with the exception of the urinary secretion, which in the collapse appears to be nearly, if not altogether suspended, there is no evidence that any of the more important and constant glandular secretions are suppressed in any stage of this disease. The milk could be readily expressed in streams from the ducts, even after death, in nursing women. All the other glands preserved their natural appearance and structure, and the lymphatic and mesenteric glands contained a secretion which presented the normal microscopic elements.

Next to the suppression of urine, the suppression or retention of the bile has been assumed (on account of its apparent absence in the dejections) to be one of the most characteristic features of Asiatic cholera. The assertion that the bile is suppressed, however, is obviously incorrect; and it is only wonderful that this idea has not met with more positive discouragement by pathological writers. In the late epidemic, in every instance, except two, the gall-bladder contained more or less of bile, which was mostly of good colour and consistence; and, in the greater number of instances, in quantity sufficient to produce considerable distension. One of the exceptional cases was the one formerly referred to, of diseased liver, in which the gall-bladder contained only a thin light-coloured fluid; in the other, abundance of bile was present in the duodenum and stomach. The gall-ducts were most frequently empty, but occasionally contained bile; a probe passed in all cases easily from the duodenum to the gall-bladder, being usually somewhat tightly grasped at the neck of the latter, as is invariably the case, whatever be the cause of death.‡ The duodenum contained, in most cases of collapse, no appearance of bile; but there were, nevertheless, several cases in which the characteristic green colour was present in greater or less amount in the contents of the duodenum and stomach, though not in those of the intestines generally.

---

* See Dr. Robertson's account of the practice in the Cholera Hospital, in the *Monthly Journal*, December, 1848, p. 394.

† Dr. J. W. Begbie has made a very extended series of observations on the urine voided in the earlier periods of reaction, from which it appears that the urea is generally much diminished, and in some instances entirely absent; and that albumen is almost invariably present in greater or less amount, together with epithelium, for a variable period after the commencement of reaction. The presence of albumen was noticed, at a very early period, in the Edinburgh epidemic, and has since been extensively observed in the Parisian hospitals. Dr. Begbie also informs me that various other modifications of the urinary secretion have been observed by him; in particular, a reaction with nitric acid indicating the presence of bile.

‡ This constriction at the neck of the gall-bladder is probably due to an elastic tissue. It has been frequently mistaken for *spasm* of the gall-ducts, a condition which, I believe *as far as post-mortem examinations are concerned*, to be purely imaginary.

It appears, therefore, clear, that the non-bilious character of the evacuations cannot be due to non-secretion. It must, therefore, be ascribed to retention of the secreted bile in the gall-bladder. But it may well be doubted whether this retention can be rightly regarded as any part of the pathological process in cholera. The quantity of bile which passes into the duodenum, under ordinary circumstances, in the absence of the natural stimulus of food, is probably very small; and the quantity which appears in the fæces in the normal state, or even under an ordinary attack of diarrhœa, would be quite insufficient to tinge visibly the enormous quantity of fluid thrown off by the intestines in cholera. Further, the examination of the cholera dejections chemically shows that biliary colouring matter can frequently be discovered in them by the nitric acid test, when it is not appreciable otherwise;* and it is fully proved by the *post-mortem* appearances, that bile is occasionally found in appreciable quantity in the duodenum during the collapse state (though to a more considerable extent during the reaction). From these circumstances, it seems probable that the secretion of the liver is discharged into the intestines in cholera, to quite as great an extent as in most diseases in which digestion is totally interrupted, or as in a healthy individual when fasting; and that its ceasing during the collapse to colour sensibly the dejections, is the consequence of its extreme diffusion through the mass of fluids in the intestines.

Repeated microscopic examinations of the liver revealed nothing unusual. The kidneys, however, appeared in many cases to have undergone morbid changes, the cortical substance being pale and turgid, and the tubuli uriniferi gorged with imperfectly developed epithelium, which was mostly loaded to an unusual extent with oleo-albuminous granules. A similar state of the kidneys occurs after scarlatina, and not unfrequently after typhus fever, and some other acute diseases.†

The secretions of the serous membranes appeared to be diminished in quantity, and everywhere more viscid than natural; an effect probably of the altered constitution of the blood.

VI. The *condition of the Intestinal Canal and its Secretions* demands special notice. The most frequent of all the abnormal conditions of the mucous membrane was the prominence of the intestinal glands, both aggregated and solitary, but especially the latter. This condition, the *psorenterie* of some French writers, was found in about two-thirds of the cases. The great frequency of patches of ecchymosis in the intestines, especially in the cæcum, has been already alluded to; in these cases, the intestinal contents were usually more or less tinged with blood, and presented blood-corpuscles among their other elements under the microscope. The ecchymosed patches were distinctly circumscribed, in tint varying from claret colour to the deepest purple, approaching black, but in parts not unfrequently greenish or ash-coloured; their surface presented a similar appearance, in all but colour, to the rest of the mucous membrane, and was not perceptibly elevated. In three instances, however, a different appearance was observed in the colon, the mucous membrane presenting a few flattened elevations, each over the extent of about a sixpenny piece, of a grayish or leaden colour. These elevated patches were evidently due to a sub-mucous exudation (probably identical with the diphtheritic exudations described as occurring in cholera by Virchow), and yielded on section a creamy fluid; in this fluid, microscopic examinations showed no well-marked pus-corpuscles or complete cells, but a number of nuclei, on which acetic acid produced no effect. In one protracted case, in which the great intestine was much ecchymosed, there were traces of dysenteric lymph on several parts of the mucous membrane. In two other instances, there was distinctly exudation of yellowish lymph, with heightened vascularity on the external serous surface of several folds of small intestine.

---

* Dr. Parkes seems to doubt whether the matter indicated by this reaction is bile; but neither does he admit it to be uric acid, the only substance which has been alleged to have caused confusion. The principal reason stated for his skepticism is, that "there is a remarkable retention of this product (bile) in cholera, as in dysentery." It will be at once obvious that this is the very preconception against which I am arguing. See the *London Journal of Medicine*, Feb., 1849, p. 143.

† I am indebted to my friend, Mr. Alexander Borthwick, now in Dumfries, who studied along with me very carefully the condition of the different organs in cholera as compared with the miscellaneous cases which came under our notice, for tabular statements which show quite satisfactorily the much greater comparative prevalence of an excessive quantity of oleo-albuminous exudation in the kidneys of cholera patients, than either in the liver or the heart, which were in this respect below the average. None of these cases, however, with the exception of those alluded to in a former part of this communication, presented the granulations of Bright, or any other unequivocal marks of a chronic disorganization.

On the other hand, it was by no means uncommon, especially in early fatal cases, to find the intestines throughout natural in colour and appearance, or even paler than natural; and in many of these cases there was no prominence of the solitary glands.

The intestinal contents resembled closely at first sight the well-known cholera stools. In their most characteristic appearance they were yellowish-white, but frequently acquired, from blood on the one hand, or bile on the other, various shades of orange and greenish colour. On microscopic examination, the intestinal contents invariably showed immense quantities of perfect epithelium, sometimes in coherent masses, peeled from the mucous membrane, and preserving the form of the villi and follicles to which it had been attached. The existence of epithelium in the fluids found in the intestines in cholera has been noticed by Boehm (see *Medical Times*, June 24, 1848), and other observers, and has been supposed to indicate a complete desquamation of the intestinal epithelium as one of the special pathological conditions of cholera. In reality, however, the appearance proves precisely the reverse; for the presence of epithelium in such large quantities in the fluids found in the intestines after death, is the result of purely mechanical maceration upon a mucous membrane to which, during life, the epithelium remained attached. That this is the case is proved by these facts: 1st. That artificial maceration produces a similar result on a healthy mucous membrane; 2d. That the epithelium found in the fluids of each division of the intestines is always that of the particular part where it is found; 3d. That the true cholera stools, *passed during life*, contained so little perfect epithelium, that it cannot be considered as anything more than an accidental ingredient.*

The examination of the cholera stools leads to much more important and less confusing results than that of the intestinal fluids after death. These discharges separate by filtration, or on standing, into a colourless, or slightly coloured fluid, of an alkaline reaction and a flaky sediment. The former is usually of a specific gravity from 1005 to 1010, and contains, therefore, a very small proportion of solid matters; these have been shown by Dr. Parkes to consist chiefly of salts. Repeated examinations of this fluid have shown, during the late epidemic (as Andral showed in the former), that albumen, as tested by heat and nitric acid, is not necessarily present in it. Indeed, the presence of albumen usually coincided with that of a small quantity of blood, which, as before mentioned, is frequently present. The fluid, however, contains *constantly* a small quantity of an organic substance which is precipitated by alcohol, by corrosive sublimate, and (when acidulated) by ferrocyanate of potash; and which presents, in other respects, the chemical reactions of mucus.†

---

* A similar conclusion, in regard to the desquamation of epithelium, has been maintained by Dr. Parkes, in an elaborate article on the *Intestinal Discharges in Cholera*, in the *London Journal of Medicine* for February last. Although there are many opinions in Dr. Parkes' paper from which I differ, it affords me much gratification to observe, that the principal facts included in the description of the cholera masses, by himself and his colleagues, correspond so nearly with what I have myself observed.

† M. Mialhe calls this substance *albuminose*, and considers it as "the ultimate product of the digestion of albuminous substances." (See *L'Union Médicale*, 5th April, 1849.)

The flakes which form the sediment of the cholera-stools, have likewise the ordinary chemical reactions and physical properties of mucus. They are, however, opaque and turbid, and when submitted to the microscope, show a hyaline finely-striated basis, involving numerous granules, nuclei, and cells. The granules and minuter molecules require no particular description. The nuclei are from a 1-250th to 1-180th of a line in diameter, circular or slightly oval, and not affected by acetic acid. The cells are comparatively few in number, mostly globular, seldom exceeding 1-150th of a line in diameter. Some of them are but little affected by acetic acid, and single-nucleated; others present all the appearances of perfect pus cells, being two, three, or even four-nucleated, and having the cell-wall rendered very transparent by acetic acid. The most common appearances, however, were the nuclei without cells above mentioned.

Any one who is familiar with the pathological phenomena displayed by mucous membranes in a state of irritation, will readily recognize the similarity of the above microscopical appearances to those of ordinary catarrhal discharges from any of the mucous surfaces of the body; the chief peculiarities of the choleric fluid being the enormous exaggeration of the watery and saline matters evacuated, and likewise the smaller tendency to the discharge of albumen, and the development of pus-corpuscles, which are so readily formed and thrown off from a mucous membrane in a state of ordinary irritation.

The effects upon the blood of the removal of the watery and saline constituents are well shown in Dr. Robertson's analysis; and it is probable that a considerable amount of the albumen of the blood also passes away by the intestines, in the form of mucus, which is nearly allied to it in composition, and which, as has been shown, forms the organic basis of the choleric evacuations.

VII. The *Nervous System* presented no lesion worthy of remark. The pia mater of the brain and spinal cord were often considerably injected, especially that of the cord, which, from the position of the body after death, almost always presents this appearance. The spine was, however, only opened in four cases; and in one of these there were found small calcareous plates upon the arachnoid of the cord—the most frequent, probably, of all its chronic lesions. The sympathetic ganglia, and the pneumogastric nerves were repeatedly examined; but nothing unusual, except in a few cases slight ecchymosis, was discovered.

55. *On the Pathological Anatomy of Cholera.*—Dr. Raikem has communicated to the Belgian Academy of Medicine the following anatomo-pathological researches on cholera. His observations were made on persons who had died before reaction had commenced; this it is important to bear in mind, as the pathological changes of that period are different from those which occur in the stage of reaction. In the former, there are none of the characters of inflammation; in the latter, they are often present.

I. *External State of the Body.*—In general, the animal heat continues longer than usual; but in no case has it appeared to rise immediately after death to a higher degree than during the agony. I have never seen spontaneous movements in the dead bodies of cholera patients, either in the limbs or lips; but a hospital pupil and several patients have told me that they witnessed such phenomena in two cases. The face was pale, sharp, and exhibited muscular contractions, so that the angles of the mouth were elevated, and the mouth was partially opened; this was observed more on one side than on the other. At the moment of death, all the limbs became stiff. This stiffness lasted some days, even when putrefaction had commenced in the anterior walls of the abdomen, and the splanchnic cavities had been opened more than forty-eight hours. It was accompanied by hardness and very distinct muscular markings, by extension of the foot, and by a very powerful contraction of the fingers on the

---

His pathology of cholera is founded on the alleged presence of albuminose in the blood, which assertion, however, he does not appear to have attempted to establish by experiment. I prefer, therefore, the more familiar term of mucus, which is perfectly applicable to this substance, and was used by Andral, to one which is associated with a very doubtful hypothesis. The nearly allied chemical relations of mucus and the protein compounds are well known.

thumb, which returned immediately after they had been, with great difficulty, extended. In most cases, the nails and fingers were in a state of cyanosis. This livid tint had its seat in the subjacent vascular tissue; and—which is a remarkable circumstance—pressure on these parts produced paleness, succeeded by a return of the colour when it was removed, just as is observed in cholera patients during life. This experiment serves to show that the black blood with which the cutaneous capillaries are engorged, is still in a liquid state, so as to be capable of being easily displaced. The disappearance of the cyanosis, from many parts, immediately after death, seems to prove the same thing.

II. *Head.*—The arteries on the surface of the encephalon usually contained a little black thick blood, easily seen through their semi-transparent coats. The venous sinuses, especially the lateral, as well as the veins beneath the arachnoid, often contained some black, viscous, semi-coagulated blood. I once observed bubbles of air in one of the venous ramifications, in a patient who had died on the fifth or sixth day of the disease. There was, as yet, no evidence of decomposition, and the animal heat remained, although more than thirty hours had elapsed since death. Slight compression on the walls of the right ventricle of the heart, caused the escape from some divisions of the jugular veins, which had been opened, of bubbles of air, and frothy blood, in large quantity. Bubbles of air have been sometimes observed to escape, with the blood, from the vein of a cholera patient, opened during life; and several physicians, worthy of credit, among whom is Professor Spring, have often found an aëriform fluid in the cerebral veins of individuals who had died of cholera. The cerebral substance presented no constant alteration; I always found, however, the choroid plexus, the velum interpositum, and the veins of Galen, gorged with blood. The upper part of the spinal cord appeared, in most cases, more firm than usual.

III. *Thorax.*—I have always found the walls of the right ventricle of the heart in an extraordinary state of flaccidity and relaxation, while the left ventricle was more or less contracted. The right auricle was very full of dark blood, frequently clotted; the right ventricle contained much less. The left cavities contained only a very little blackish thick blood, more liquid than in the right side. It may hence be presumed, that the functions of the heart ceased with the diastole of the right, and the systole of the left ventricle.* The venæ cavæ, the azygos, intercostal and mesenteric veins, etc., usually contained more or less dark thick blood; but the latter veins were frequently flabby and weakened, containing less blood than their calibre would hold, and presenting no appreciable change of their walls. I have pretty often found in the arteries a little dark blood, especially in the aorta and carotids. The interior of these has several times appeared of a rosy tint, while the internal coat was softened and capable of being easily raised, bringing to view a number of small whitish striæ, formed by atheromatous matter, in the subjacent cellular tissue. The lungs were generally more or less collapsed, leaving an interval of two or three inches between their anterior surface and the costal pleura. Their anterior surface was uneven; their substance felt like marrow, and crepitated but little. They were light, and almost exsanguine in the greatest part of their extent, except in their posterior and inferior part, which was the seat of slight sanguineous engorgement, and presented a more or less deep red colour. These viscera were often also emphysematous, retaining the impression of the finger. They were of a much lower specific gravity than water, and had no mucus nor froth in the bronchial tubes, and only contained an appreciable quantity of blackish blood in the vessels of the posterior and inferior portions. I have never met with tubercles in the lungs of cholera patients; however, in one case there was tuberculous matter in the bronchial glands, and in the submucous cellular tissue of the ileum. Nor have these viscera ever presented traces of inflammation. However, in a young woman who died on the fifth day, and who presented on the fourth some symptoms of pleurisy, followed by hæmoptysis, I met with a sort of splenization of the inferior lobe of the right lung. This lesion was to be referred, I think, to hemorrhagic congestion, with sanguineous effusion into the pulmonary vesicles, the minute bronchia, and the cellular tissue of the organ.

---

* In a report read to the Académie de Médecine of Paris, in December, 1831, it is stated, that the heart, in the bodies of cholera patients, never presents the same persistence of contraction as the muscles of the limbs.

IV. *Abdomen.*—The liver was slightly gorged with dark thick blood, but presented no remarkable alteration. The gall-bladder was usually distended with bile of variable colour and consistence. I have several times found biliary calculi. Another time, its walls were opaque, whitish, thick, studded with highly-developed hyperæmiated vascular ramifications, and contained a large quantity of a clear limpid fluid, holding mucosity in suspension. Analogous observations have been made by a celebrated French physician, in cholera patients. The portal vein contained little or no dark blood; its walls were collapsed, and presented no apparent alteration. The spleen, in no case, appeared to me softened and gorged with blood. It was not uncommon to find the mucous membrane of the stomach presenting, here and there, hyperæmiated and well-developed villosities, a more or less distinct dotting, or an arborescent injection with softening in various stages. In one case, that of a tanner who suddenly fell ill on the 27th of March, and died in twenty hours, I observed a circumscribed portion of the mucous membrane of the large end, to be of a grayish colour, very much softened, without any trace of organization, detached from the surrounding tissues, and exhaling a repulsive odour;—an alteration which I considered as a slough. The stomach, but especially the intestines, almost always contained a whitish creamy matter, less thick in the small than in the large intestines, and containing small grumous particles of the same colour. In three cases, these were replaced by whitish flocks, formed of very distinct *debris* or *detritus* of disorganized fibres; this happened in cases where a more or less extensive portion of the mucous and muscular coats of the intestinal tube had been destroyed or mortified, in consequence of a non-inflammatory pultaceous softening. The liquid was occasionally sanguinolent, or tinged yellow with bile, which seldom appeared in any great quantity in the duodenum and other small intestines. I have often met with lumbrici, but only once with a tricocephalus in the cæcum, a small entozoon which may be found in most subjects, of whatever disease they die. The internal surface of the intestinal canal was coated with a layer of thick glutinous mucus, or with a white creamy matter. Most frequently, it presented a more or less intense diffused redness, and a more or less marked arborescent injection. In these cases, I easily succeeded in producing paleness, by passing my finger several times over the hyperæmiated portions. This confirms the experiments of M. Magendie on the permeability of these vessels in cholera patients, and shows the absence of inflammation. The mucous membrane of the intestines was sometimes pale, colourless, and thin, and exhibited vascular scattered ramifications through the sub-mucous cellular tissue. It was frequently covered, especially in the lower part of the ilium, with round whitish corpuscles, about the size of a hemp or millet seed, or even smaller. These corpuscles, more or less numerous, had a certain degree of hardness, and were raised above the level of the mucous membrane, rendering it rough to the touch. I have never met with them in the stomach; but it was not rare to find them scattered over the whole surface of the intestines, even on the spaces occupied by the glands of Peyer. The base of these corpuscles was of a pearly white, and surrounded by a sort of areola of hyperæmiated arborescent vessels. I rarely found them flattened, and with a distinct aperture in the centre; some of them appeared deprived of epithelium, and superficially ulcerated at their summit. When they were separated from the intestines, and punctured with a lancet, I was able to press from them a milky liquid, analogous to that found in the intestines. As these corpuscles are found indiscriminately in all parts of the intestines, it seems that they cannot be attributed to a morbid hypertrophy either of the glands of Brünner, which are peculiar to the duodenum, or of the glands of Peyer, which are found only in a certain part of the small intestines, but to an histological element common to different points of the intestinal canal. From the characters which they present, I suspect that their seat is in the closed capsules, or solitary follicles without an aperture, which are found scattered throughout the intestines. The villi of the small intestines were commonly more developed than usual, and of a whitish colour. I have twice found the ilium without traces of inflammation, covered with ulcerations of more or less depth, with ragged edges, resting on the muscular coat, and in some places on the peritoneum, with softening of the surrounding mucous membrane. This had, in a more or less considerable extent, been in some way destroyed or liquefied, so that there only remained the peritoneal coat, covered by some remains of the superjacent tissues. The intestinal walls, then, viewed through daylight, resembled thin gauze, being semi-transparent, and very easily torn. In another case, that of an armourer, aged 26 years, subject to epilepsy, who had been ill only a few hours, the cæcum and a part of the colon were found attacked with a similar morbid erosion of the mucous, cellular, and muscular coats, without any appearance of hyperæmia or inflammation, even in the peritoneal membrane. I have sometimes met, here and there, with circumscribed ecchymoses and a sort of sanguineous infiltration, in the fatty vesicles situated between the layers of the epiploon and mesentery. The mesenteric glands were commonly a little swollen, firm, of a rose colour; and, when cut into, allowed some serous liquid to exude. I have never met with intestinal invaginations in cholera patients; the colon has, however, occasionally presented permanent contractions. Each time that I have made a careful examination of the superior cervical and semi-lunar ganglia, by placing thin slices of them on plates of glass, I have recognized with the naked eye, and still better with a powerful lens or with a microscope, a more or less marked arborescent vascular hyperæmia, often accompanied by small, sometimes by considerable ecchymoses, in their substance. The bladder was commonly empty, contracted, and lined with a whitish creamy matter; in one or two cases I was able to obtain some urine.

Remarks.—Death, in cholera, has been attributed to paralysis of the brain—*apoplexy;* to paralysis of the lungs—*asphyxia;* to paralysis of the heart—*syncope.* I am not disposed to admit the existence of paralysis of the solar plexus. Paralysis of the principal foci of life may occur either suddenly or gradually. Whatever may be the cause of death in the concatenation and succession of phenomena which precede it, I think with some others, that there is a moment when it commences either in the heart, in the lungs, or in the brain. But which of these organs is it that first loses life, or functional activity, in cholera patients? It is not probable that the action of the brain ceases before that of the lungs and heart. In fact, the patient preserves his intellectual, moral, and affective faculties entire, up to the last moment; and the cerebral functions are least deranged in the course of the disease. It is generally admitted that cholera patients die of asphyhia. But when I reflect on the anatomical characters of asphyxia—voluminous, distended, inflated lung, heavier than usual, of a dark violet colour in its whole extent, gorged with dark fluid blood, and having the bronchia filled with a frothy liquid, etc., while in cholera patients it is collapsed, light, more or less exsanguine, with no froth in the bronchia, etc.,—I am authorized in saying that anatomo-pathological facts do not support the idea of asphyxia in cholera. Such an idea is also opposed by the non-persistence of the contractility of the fibres of the heart, as well as by the phenomena presented by the circulation in the course of the disease, which tend to show that the central organ of the circulation is primitively affected with inertia and want of power. I would then adhere to the opinion of those who consider that death begins from the heart. When syncope terminates various diseases, said the immortal Bichat, we constantly observe the lungs almost entirely empty; they are not gorged with blood. If no organic disease have pre-existed, they are collapsed, occupying only a part of the thoracic cavity; and retain their proper colour.—*Lond. Journ. of Med.*, Aug. 1849, from *Gazette Médicale de Paris,* July 7th, 1849.

---

56. *Medicines at Long Intervals in Cholera—Value of Calomel and Carbonic Acid Gas at Short Intervals.* By P. Niddrie, M.D.—It is melancholy that cholera continues to be treated by means which much experience has shown to be perfectly useless, and that even high authorities continue to recommend means that have not the least influence on this disease. I have notes of ninety-

three cases that occurred, in the year 1832, in the choleral hospital ship, *Dover*, thirty-three of which terminated fatally; and from these, and many subsequent cases, I have fully ascertained, that brandy in any quantity, up to a bottle in twelve hours, does not at all stimulate; that ammonia is equally powerless, and that opium, chalk, heat, friction, and bleeding, are perfectly useless. So little effect had these and other remedies, that I feel assured they did not in the least retard the fatal termination of any of these thirty-three fatal cases, and in one case the fatal termination was certainly accelerated by the abstraction of a few ounces of blood. Calomel and soda water, given every three or four hours, were equally useless. Melancholy experience of the uselessness of such means has led some to believe, that treatment is of no avail in cholera, and that most cases would do quite as well if left entirely to themselves. This is doubtless the case in severe cases of collapse, if medicines be administered every three or four hours; but what results from the treatment so zealously urged by Dr. Ayre? In a former number of *The Lancet*, I gave details of one of the numerous cases that have convinced me that cholera, even in the stage of collapse, is quite as manageable as any other severe disease. The mode I have followed differs little from what I find Dr. Ayre so zealously recommends, and consists in placing on the tongue two grains of calomel, mixed with a little sugar, to be washed down by an effervescing draught. If rejected, the dose is repeated immediately; if not followed by vomiting, the dose is repeated in from five to ten minutes, till reaction commences, when the period between each dose is gradually extended to an hour or longer. Calomel and carbonic acid gas seem to be as powerless as other means, unless thrown constantly into the stomach; therefore, this mode of giving them must be followed, and the course of the disease being so very rapid, the patient must not be left until collapse yields to the constant attacks of these remedies. I have had ample experience of the total uselessness, in cholera, of large doses of medicines given at long intervals, and am fully convinced of the great value of calomel and carbonic acid gas, constantly and perseveringly administered at short intervals. Under this treatment purging ceases, or becomes less frequent, although vomiting may occasionally recur for some time; the expression of the countenance gradually changes; the temperature of the breath and tongue rises; the pulse gets stronger, and the skin warmer; cramp becomes slight, and extreme collapse is followed by little or no febrile excitement; and the gums do not even swell if care be taken gradually to discontinue the calomel, by extending the period between each dose as collapse disappears. I would earnestly urge this treatment on those who have found the usual remedies fail, and am assured, that if this mode of administering calomel be strictly followed, the result will be found to be as happily successful as the usual large doses of medicines at long intervals are found to be despondingly powerless.—*Lancet*, Sept. 1, 1849.

---

57. *Treatment of Cholera at La Charité in Berlin.* By J. Lamprey, M.D.—The remedies mostly used in the treatment of this disease were the cold effusion, and cold fomentations to the abdomen and head; frictions of warm flannels, or sometimes jars of hot water, were applied to the feet, to keep up the temperature of the extremities. The medicinal agents, with few exceptions, were not selected from any particular class, or for any other purpose than to meet symptoms.

"The patients, when admitted, were almost too far gone for any remedy to be of use. . . . They were always received in a state of syncope or asphyxia, and required some powerful stimulant to restore the suspended animation; for this purpose the cold effusion was found the most powerful and expeditious agent.

"The manner of applying it in the hospital of Berlin was as follows: As soon as the patient was stripped of his clothes he was placed in the wooden bath before mentioned; one assistant nurse supported him in an upright sitting position, whilst another assistant dashed a bucket of cold water on his head and back; he then took another bucket of cold water, and poured it equally quick on his face, thorax, and abdomen. The patient was then partially wiped dry, and lifted into bed, when sometimes he was wiped drier, and hot jars applied to his feet. As soon as this was done, a large sheet saturated in cold water, and folded up, was placed on his abdomen as a cold fomentation; another smaller piece of wet linen was placed on his head. This process was repeated three times in the twenty-four hours.

"I had an opportunity of witnessing this process and its effects on several occasions. On examining a patient in a short time afterwards, I was surprised to see the immediate restoration of animation take place, though the patient had been pulseless and cold before he was placed in the bath, yet in a few moments the pulse could be felt, and an increase of warmth perceived, which gradually improved. In some cases the patient began to perspire profusely, and recover immediately after the first or second application.

"The medicinal agents used were derived from no particular class, one excepted, which was used as a specific only, by the Persians originally, and lately by the Russian physicians. I allude to the radix sambul. It is a root of a very peculiar volatile odour, strongly resembling the perfume of violets, on which in all probability its virtues depend, as great caution is required in its preparation, in infusion and decoction.

"The issue of the case in which this had been tried should certainly be no criterion of its value. An emetic of a scruple of ipecacuanha and one grain of potassio-tartrate of antimony had been administered in one case, probably on the same principle that it is sometimes given in fevers—namely, to cut short the attack. Unfortunately, where this had been tried, though the case appeared favourable enough for it, it did not succeed: the patient died in a few days after, from some cerebral complication.

"Dr. Ward, of the Bethanien, informed me that he treated two cases with nux vomica, giving ten drops of the tincture three times a day; and that one case recovered, the other sunk. He also told me that a friend of his gave charcoal with good success.

"Chloroform had been tried on two occasions: the first case derived a temporary benefit from it, as it completely subdued the spasms, and afforded tranquillity for about three hours; but its effects were not permanent, as these symptoms were renewed as soon as its effects were over. From the partial success in one case it was tried in another; but unfortunately *immediate death was the consequence.*"

The success of the "cold effusion" plan even Mr. Lamprey allows not to have been very encouraging—"the cures being only in the ratio of sixteen per cent." So much for the *cold water* system!—*Lancet*, July 7, 1849.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

58. *Cases of Poisoning by the Acetate of Lead.*—Dr. William Norris, of Stourbridge, relates, in the *Provincial Med. and Surg. Journal*, June 27, 1849, a distressing occurrence which took place in the towns of Stourbridge and Kidderminster and the neighbouring villages, from the mistake of a miller's servant, who mixed about thirty pounds of acetate of lead, in the place of alum, with sixty or eighty sacks of flour. Nearly a thousand persons suffered from the poisonous effects of the lead.

The sufferings of the patients were unusually protracted and severe, in consequence of eating the poisoned bread some weeks after the violent symptoms first commenced, the strongest and most robust men (from long suffering, and from the frequent occurrence of violent paroxysms,) have been reduced to the most emaciated and feeble state.

The persons who ate the bread, after a few weeks complained of a peculiar taste; some compared it to soda, others to rusty needles or copper. The tongue was covered with a darkish cream-coloured mucus, and was soft and flabby; the gums were swollen, with a blue line on the margin, and in many cases the blue tinge extended nearly over the gums, and occasionally on the inner side of the lower lip, and in a faint degree over the mucous membrane of the mouth and towards the fauces; the tonsils were in some cases enlarged, producing soreness of the throat, and in other cases there was salivation, a clear fluid flowing from the mouth many days after convalescence. These symptoms were accompanied by loss of appetite, nausea, vomiting, flatulency, and obstinate constipation, with a sense of constriction in the throat and epigastrium, and a violent spasmodic pain and twisting around the umbilicus, which was retracted; the pain was sometimes increased by pressure, occasionally extending over the abdomen, and when the paroxysms were violent, the muscles of the abdomen were contracted spasmodically, and a most frequent symptom was pain in the loins, about the situation of the lumbar fascia, and in the deltoid muscles. The patients were chilly, with great languor and lassitude; the cutaneous secretion was diminished; the intellect was clear, but there was generally depression of the nervous, sanguineous, and muscular systems; the pulse was low and feeble; the features were sallow, and shrunk; and the muscles felt soft and flabby; the fluid vomited was often mixed with bile, and occasionally coffee-ground secretion; the fæces were dark, and highly offensive, with scybala; the secretion from the kidneys was scanty, and of a dark red colour, almost like porter.

Treatment.—The bowels were in general so obstinately costive, that large and frequently repeated doses of the strongest cathartics were often necessary. Sometimes I began with a large dose of calomel, followed by sulphate of magnesia or castor oil; when these did not produce sufficient effect, croton oil, and voluminous enemata, were used with manifest advantage. Croton oil frictions were useful when vomiting was excessive. To allay the sickness, hydrocyanic acid, or a few doses of calomel and opium. By the omission of the daily purgative, the symptoms would in many cases return. The patients were directed to take light nutritious food and milk during convalescence. Some cases were so slight (although the gums were blue) that the patients would not take medicine.

In violent cases, when other remedies had failed, the warm bath relaxed the spasms very speedily. Opiate frictions, and bran poultices, were useful in milder cases. The soothing effects of the warm bath, in some instances, were quite astonishing, and in violent cases it should never be omitted, for it not only relieves the abdominal pain, but allays the spasms and irritation in other muscles of the body. When there was tenderness in the abdomen on pressure, leeches were beneficial; and in one case venesection was absolutely necessary.

A young woman, Phœbe Welch, aged 22, who had suffered severely from peritonitis three years before, had been ill from the effects of lead more than a week, when the pain in the abdomen much increased, with great tenderness on pressure, feverish excitement, and rapid pulse. Venesection and leeches were used, and the sufferings were mitigated; the symptoms returned with increased violence, and bleeding and other antiphlogistic remedies were repeated. The blood was buffed and cupped. As the inflammatory symptoms subsided, she became almost maniacally hysterical on several successive nights, and yet she recovered many weeks sooner than any of the family, so that I am inclined to believe, in strong subjects venesection may be useful.

In very severe cases there were great exhaustion, and a slight leaden hue in the countenance; then stimulants became absolutely necessary.

In one of the last numbers of the *Provincial Journal*, iodide of potass is recommended in small doses, as a remedy for the poisonous effects of lead and mercury, by forming a soluble salt, which is readily eliminated. The experiments were performed by M. Natalis Guillott, read before the Academie des Sciences, Paris. Dr. N. has tried this remedy in several cases; and certainly, gums that had been blue for months, in a few days changed to a more natural appearance, and no symptoms of severity have since occurred; in fact, the patients appear now quite convalescent.

Dr. Norris remarks that "the poison of lead appears to exert its deleterious effects mostly on the muscular system. One of the most frequent symptoms was an acute or chronic pain in the muscles of the loins, and perhaps also in the fascia lumborum; and in many cases the larger muscles of the body were affected with pain. Probably the abdominal pain is occasioned by the spasmodic constriction of the muscular fibres of the larger bowels, thus diminishing their contractility of tissue; and this may, in part, be the cause of the constipation, though in some cases the pain may be confined to the abdominal muscles.

In a youth, 18 years of age, with blue gums, the pains were confined to the muscles of the arms and legs, and he suffered most severely from violent contractions in all the extremities, without pain of abdomen or loins.

In this neighbourhood we have numerous glass houses, and many hundreds of men are constantly employed in the fumes of lead, and we know them by a sallow, thin, unhealthy aspect, with soft and flabby muscles. The relapses in some constitutions were very frequent and very severe, sometimes after several weeks had elapsed, and patients thought themselves well.

Mr. Segar, aged 47, an irritable man, of nervous temperament, had suffered from several severe paroxysms, the pains began gradually to return a month after the onset of the disease, and increased like the pains of labour, every ten minutes or a quarter of an hour; there was great difficulty in relieving his bowels (which, in many instances, were locked up for a week or nine days); when the bowels were cleared, large and repeated doses of laudanum only mitigated his sufferings, till at length, at the end of thirty-six hours, the pains were returning very frequently, and became more and more violent, in the abdomen, back, and various parts of the body, somewhat similar to the last pains of childbirth, with the pulse excited, and the face flushed; he was almost maniacal, biting and tearing anything before him. An immersion in the hot bath acted like a charm; in a few minutes the pain subsided in the bath. He went into a profuse perspiration, and slept all night. At the end of two months the case terminated with severe diarrhœa.

Sarah Welch, aged 20, a strong robust woman, had more than a dozen severe paroxysms for six weeks, and was confined to her bed, and at the end of seven weeks had an attack more severe than any that preceded. The pains intermitted, being sometimes moderate, then succeeded by agonizing torture. The warm bath gave great relief in this case, but there was a slight return from irritating scybala; and so long as scybala remain, there is no safety. In these cases the lower bowels were often freely opened, still much irritating matter remained in the upper bowels, and perfect ease from the paroxysm cannot be insured till all irritating secretions are removed. All ages suffered, even children at the breast; also rabbits and birds. Some persons were affected very slightly, having only a slight griping pain in the bowels, with muscular pains, dyspeptic symptoms, and a half-jaundiced appearance. Many of these chronic cases went on two or three months without any violent paroxysm.

I attended a painter, who had suffered severely from paroxysms nearly a week, when some scybala came away of very curious appearance, of oval shape, the size of marbles; they were fatty substances, rather hardened, like suet, with a green tinge. The patient told me that for weeks he had been eating fat mutton, and had been very much employed mixing green paint. The symptoms now subsided; he had no return.

The extensive blueness in the gums was a very characteristic feature in this disease. I saw 120 cases, and I witnessed this peculiar change in most of them. There were very few exceptions. Those patients with the gums most tinged did not always suffer the most acute symptoms, but they continued more or less indisposed till the gums assumed their healthy aspect; but I do not consider any patients safe, if they have suffered from severe paroxysms, while this unnatural appearance remains, for many have followed their avocations for weeks, and have then been doomed to fresh, and perhaps more severe attacks. I ate the poisoned bread myself, but the symptoms went off very lightly. In convalescence, I always enjoined strict attention to the bowels, very warm clothing, and a milk and light diet.

No case of paralysis of the arms has yet occurred. Some violent cases were followed by mild typhoid symptoms, others by slight jaundice, anasarca, and diarrhœa. One diseased old woman, subject to pyrosis, I think must have died from exhausting diarrhœa, if she had not been well supplied with laudanum, brandy, and other stimulants.

Some are easily affected with small doses of lead, whilst others I have seen since the last few months have resisted its effects most wonderfully. I knew a man take half an ounce of liquor plumbi in mistake, without any ill effects.

59. *Case of Poisoning by the Berries of the Daphne Mezereon.* By Dr. Schwebes, of Königsberg.—Cases of poisoning by the berries of mezereon are by no means frequent, notwithstanding their resemblance to the common red currant, and the frequency with which the plant is cultivated as an ornamental shrub in gardens. Experiments on animals have proved that these berries contain a very active poison. Mitscherlich killed a dog with twenty grains of the powder, and Linnæus saw a wolf killed by six of the berries. For these reasons, Dr. Schwebes deems the following case of sufficient interest for publication:—

Two children, one a boy of four years of age, the other a girl two years old, rambled unnoticed into a neighbour's garden. On returning home, the boy complained of a sense of burning in the mouth, followed by nausea. He, of his own accord, attributed his illness to his having eaten some red berries which he had found on a shrub in the garden. Medical advice was immediately procured. Before Dr. Schwebes arrived, milk had been given to him, and he had vomited freely, the vomited matters contained a quantity of the berries of the Daphne mezereon, some masticated and some entire. The child continued to complain of dryness and heat in the mouth, and of burning pain in the stomach. A reddish mucus was voided from the throat and mouth, but no abrasion or blister could be discovered on the mucous membrane. The inclination to vomit continued, but nothing was ejected. The pulse was regular.

The girl, who, according to her brother's statement, had eaten the berries as well as himself, was playing about the room, without manifesting any signs of indisposition.

An emetic was given to each of the children: the boy vomited the remainder of the milk he had drunk, mixed with more berries. The girl vomited after a longer interval, and ejected eight entire berries. On visiting the children in an hour afterwards, Dr. Schwebes found both in a state of complete narcotism, with coma: there were convulsive movements of the eyes and upper extremities occurring at short intervals; the pupils were contracted, and scarcely sensible to the stimulus of light.

It thus appears that the poisonous action of mezereon depends upon irritation of the brain and upper part of the spinal cord. The convulsions must be attributed to irritation of the intestinal canal through the sympathetic nerve, as in helminthiasis.

By warm baths, cold affusion to the head, sinapisms to the extremities, and other appropriate treatment, the coma and convulsions disappeared, and on the following day both children had perfectly recovered.

By way of experiment, Dr. Schwebes gave six berries of the same shrub to a rabbit, which masticated and swallowed them: three hours afterwards the animal ate food that was put before it, and appeared none the worse for the poison which it had swallowed.—*London Med. Gaz.*, Aug. 1849, from *Casper's Wochenscrift,* August 26, 1848.

MISCELLANEOUS.

60. *A Statistical Inquiry, as to whether the Proportionate Frequency, the Nature, and the principal Characters of Diseases have undergone in the course of time the great Modifications they are said to have done.* By M. Valleix.—The object the author has in view in the present communication, is to determine whether, by the study of certain diseases in a diagnostic point of view, during an epoch not far removed from our own, and one that is remarkable for its revolutions in medical doctrines, we may arrive at certain conclusions, capable of being generalized and applied to anterior periods. It is continually asked, whether such or such a disease existed heretofore?—whether it prevailed as frequently formerly as now?—and whether changes in hygiene, the progress of civilization, or other more or less powerful influences, have not operated changes in our affections? In reply, we are obliged to confine ourselves to vague generalities.

The period M. Valleix has chosen for examination, is the twenty years intervening between 1819–39, during which facts of such an importance have occurred, as to have almost totally changed the face of science; so that a person, conversant with internal pathology only in works written before 1819, would scarcely comprehend the physicians of the present age. In 1818, appeared the last edition of Pinel's "*Nosographie Philosophique,*" which had constituted the code of medicine in France for twenty years before. The author had, however, now reached the end of his reign, although the attacks of Broussais had not yet completed his dethronement. The latter published his "*Examen*" in 1816, and *his* domination may be said to have continued from 1820 to 1830, to be submitted then, in its turn, to attacks no less vigorous and successful, leaving behind, however, certain general views of undoubted utility, and which have put us on the track of important discoveries. In a third period, from the fall of Broussaisism, we have the prevalence of "rigorous medicine," exact observation, and assiduous experiment replacing doctrines founded on hypothesis and ill-observed facts. Typhoid fever now took the place of that gastro-enteritis, which itself had so violently displaced the ataxic, adynamic, bilious, putrid, &c., fevers of former times. Just as the system of Pinel was about yielding to that of Broussais, in 1819, appeared Laennec's work on Auscultation, imparting a precision to the diagnosis of certain diseases, of material service in solving the question before us.

M. Valleix, having had his attention directed to the large number of deaths from *pneumonia,* occurring at the Salpêtrière (the hospital for aged persons), examined the mortuary list for a long period back, and discovered most remarkable differences in the proportional frequency of this and other diseases. Laennec's work, having been published only in 1819, it required some time to educate physicians in auscultation. Thus, we find, from 1819 to 1821, 60 deaths per annum are set down to *pulmonary catarrh,* a number which, now we know how rarely this of itself produces death, seems enormous. From 1821 to 1829, the number averaged but 14 or 15; and from 1829 to 1839, but 19 per annum. Were cases of *phthisis* mistaken for pulmonary catarrh during the first period? No; for to this disease is also assigned a higher figure (39 and 40) than in later years, when it varied from 20 to 24. Nor do cases of mistaken *pleurisy* explain the difference; for the numbers of these, during the three periods, were respectively 30, 10, and 42. This latter discrepancy of numbers is to be explained by the fact, that, when auscultation was little known, many cases were, from the presence of pain in the side, cough, &c., set down as pleurisies. In the middle period, much hesitation prevailed in pronouncing upon such cases, while the more perfected knowledge furnished the high proportion of the third, and which, probably, in future will be maintained. The true explanation of the diminished number of deaths from pulmonary catarrh, is the vast increase of those proved by auscultation to be due to *pneumonia,* in the aged, as we shall presently see.

The consideration of the *cerebral affections* present analogous facts. From 1819 to 1821, *apoplexy* was alone familiarly known. Ramollissement, the paralysis of the insane, and encephalitis were nearly unknown. From 1819 to 1821, there were 158 deaths per annum attributed to *apoplexy,* which, in 1821–29 sank to 59, and continued at much the same figure (61) during 1829–39. A more exact knowledge of cerebral affections, derived from the investigations of Rostan, Lallemand, Calmeil, Foville, and others, explains this. Thus, in 1819–21, *ramollissement* is only assigned twice as the cause of death, and during the next period, information on the subject not yet being very accurate, it was generally confounded with encephalitis; but, during the next period, the number averages 22. Add the 22 to the 61 apoplexies of this period, and abstract it from the apoplexies of the first, and an approximation of numbers commences. As to *encephalitis,* during the prevalence of Broussaisism, most cerebral affections were so termed. Thus, during 1819–21, two or three deaths per annum are noted; during 1821–29, 48; and during 1829–39, when ramollisement asserted its claims, only 16. Add the 48 encephalites to the 5 ramollissements, and the 59 apoplexies of the Broussaisian period, and we have 112; while, if we abstract from the 161 of these diseases of the first period the 53 of the encephalitis and ramollissement of the second, we have 108—a not very different figure from 112. Next, if we add to the apoplexies and ramollissements of the third period, 61, the encephalites, we have the number 99, which forms some approach to that of 123, obtained by abstracting the 38 ramollissements and encephalites from the 161 of the first period. The *general paralysis* of the insane will serve to fill up the lacunæ. Thus, while, in the two former periods, it only furnished 4 deaths, during the third it furnished 24.

We have now seen a disease, as it were, enveloping in itself and concealing the existence of three others, of a different nature, though occupying the same seat. We next have to observe several others, of apparently different nature, become sunk and lost in one which absorbs them all. During 1819–21, the word *fever* was still pronounced, though tremblingly, and we find 71 deaths attributed to adynamic, and 39 to 40 to ataxic fever. During 1821–29, the adynamic sank to 19 or 20, and the ataxic to 6 or 7; while, during 1829–34, the diminution is still more complete,—the adynamic sinking to 3 or 4, and, after 1834, disappearing altogether, and the ataxic being noted but once in a year. What has become of all these fevers? During 1819–21, little mention was made of *enteritis* (23 per annum) and *gastro-enteritis* (9); but, during 1821–29, they averaged 36 and 37 respectively. It is evident that many fevers became thus transformed; and the proof of it is, the great diminution of these inflammatory affections since the fall of Broussaisism; but the adynamic and ataxic fevers have not reappeared to replace them. Both the fevers and the inflammations have, in fact, disappeared; and, for the explanation of this, we must return to the consideration of *pneumonia.* During 1819–21, this disease figures at 72 per annum; during 1829–39, at 110; and during 1829–39, at 256. Take from this 256 the 72 of the first period, and we have a residue of 184, which has furnished the material for the ataxic, adynamic, putrid, and other fevers, gastritis, gastro-enteritis, and, as we have seen, fatal pulmonary catarrh. Strange is the fact, that Pinel, himself physician to the Salpêtrière, furnished from this very hospital a description of fevers, recorded at the time with enthusiasm; and that these fevers, now termed typhoid, are no longer found within its walls. Stranger still, that Broussais, who saw imaginary gastritis or gastro-enteritis, could not see a real pneumonia! It can now, however, be no longer doubted, that pneumonia is *the* acute disease of the aged, and is, in fact, almost the only one, after a certain age, that occurs.

The general conclusion to be drawn from all that precedes is, that we must not blindly rely upon the statements of authors, to the effect that different diseases have appeared or disappeared at certain epochs, or that they have undergone much change in severity or frequency. We should first assure ourselves that such authors have not been deceived by a simple change of name, and have not thus transformed one disease into another.—*Brit. and For. Med.-Chirurg. Rev.*, April, 1849, from *L'Union Médicale*, vol. ii. Nos. 101–4–7.

---

61. *Important Discovery in Ventilation.*—We copy the following from the *Literary Gazette.* We have long been aware that Dr. Chowne has been making experiments in ventilation, and that he has pursued them with an unwearied perseverance. He deserves the success which has attended his efforts to improve this important branch of hygiene. "At a time when cholera, with an appalling voice, calls the most earnest attention to house-ventilation, and dreadful explosions and loss of life in mines demand no less anxious efforts to devise means for the prevention of these calamities, we have much satisfaction in anticipating that human residences may easily be supplied with a continual circulation of wholesome air, and the most dangerous subterraneous works be preserved against accidents from foul currents or fire-damps. Dr. Chowne has enrolled a patent for Improvements in Ventilating Rooms and Apartments, of the perfect efficacy of which, we believe, there cannot be a doubt, and on a principle at once most simple and unexpected. Without going into details at present, we may state that the improvements are based upon an action in the inverted syphon which had not previously attracted the notice of any experimenter—viz., that if fixed with legs of unequal length, the air rushes down into the shorter leg, and circulates up, and discharges itself from the longer leg. It is easy to see how readily this can be applied to any chamber, in order to purify its atmosphere. Let the orifice of the shorter leg be disposed where it can receive the current, and lead it into the chimney (in mines, into the shaft), so as to convert

that chimney or shaft into the longer leg, and you have at once the circulation complete. A similar air-syphon can be employed in ships, and the lowest holds, where disease is generated in the close berths of the crowded seamen, be rendered as fresh as the upper decks. The curiosity of this discovery is, that air in a syphon reverses the action of water, or other liquid, which enters and descends or moves down in the longer leg, and rises up in the shorter leg! This is now a demonstrable fact; but how is the principle to be accounted for? It puzzles our philosophy. That air in the bent tube is not to the surrounding atmosphere as water, or any heavier body, is evident; and it must be from this relation that the updraft in the longer leg is caused, and the constant circulation and withdrawal of polluted gases carried on. But be this as it may, one thing is certain—that a more useful and important discovery has never been made for the comfort and health of civilized man. We see no end to its application. There is not a sanitary measure suggested to which it may not form a most beneficial adjunct. There is not a hovel, a cellar, a crypt, or a black, close hole anywhere, that it may not cleanse and disinfect. We trust that no time will be lost in bringing it to the public test on a large scale, and we foresee no impediment to its being immediately and universally adopted for the public weal. We ought to remark that fires or heating apparatus are not at all necessary; and that, as the specification expresses it, 'this action is not prevented by making the shorter leg hot while the longer leg remains cold, and no artificial heat is necessary to the longer leg of the air-syphon to cause this action to take place.'"

[Extraordinary as this may appear, we have witnessed the experiments made in various ways, with tubes from less than an inch to nearly a foot in diameter, and we can vouch for the fact being perfectly demonstrated. Light gas does descend the shorter leg when heated, and ascend the longer leg where the column of air is much colder and heavier!—Ed. *L. G.*]

62. *A New Disinfecting Apparatus.*—A very simple and cheap apparatus has been contrived by Mr. Charles Watts, formerly editor of *The Chemist*, for the purpose of disinfecting apartments, or other localities, in which foul effluvia abound. It consists of a wide glass with a perforated mahogany top, in the centre of which is plunged a glass vessel, shaped like a wide percolator. This vessel is intended to hold the muriatic acid, which, by a slight management of the stopper, can be allowed to drop *guttatim*, to flow in a stream, or to be altogether cut off, at the option of the person using it. The lower glass may contain oxide of manganese, sulphite of soda, or other chemical compounds which undergo decomposition on contact with muriatic acid. The evolution of the gas may be greatly expedited, if required, by placing this lower glass on heated sand, or in a vessel of warm water.—*Lond. Med. Gaz.*, August, 1849.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of Pseudo-membranous Laryngitis. By Dr. W. Chew Van Bibber, of Baltimore.

Recoveries from pseudo-membranous laryngitis are so rare that each is worthy of being remembered.

The following case is interesting on account of the urgency of the symptoms, the unmistakeable character of the disease, and the promptitude of the relief.

Hugh Brady, aged 3 years and 2 months, was observed on the 11th of January to have catarrh with cough and hoarseness.

On the 13th, Dr. J. L. Webster was called; found him with high fever, difficult respiration, ringing, croupy cough, voice a whisper, throat inflamed, tonsils enlarged; no membranous exudation on tonsils or fauces.

On 14th. Cauterized the throat with water ℥i, nit. argent. grs. xiv. Prescribed calomel and emetics, with a blister on the sternum. This treatment was continued until I saw him in consultation, on the 23d, the 12th day of the disease.

Symptoms.—Respiration 32, forced; alæ nasi expanded and mouth open; loud blowing and hissing sound in inspiration and expiration, but louder in inspiration; head thrown back, buried deep in the pillow; laborious heaving of chest; countenance of fearful anxiety; eyes open and glassy; pupils contracted; profuse perspiration over head, chest, and upper extremities; legs and feet dry and hot; pulse full and fast, 140.

Sibilant and mucous rales on both sides; if any other sounds existed, they were masked by the loud blowing sounds in the larynx and trachea. Tongue and mouth parched and dry. No false membrane could be discovered on the throat by the red light of a candle.

Having acquired some dexterity with the probang, we attempted to pass Dr. Green's instrument into the larynx. Saw the epiglottis erect, but failed to get the sponge entirely through the cartilages. From the violent expulsive efforts produced we concluded (which is no doubt true) a small portion of it dropped into the trachea. In a few moments there were expelled by these efforts many fragments of false membrane, the longest of which was nearly two inches, ragged and detaching itself in water; was light coloured and tough; we attempted to pass it again, and a third time with the same result. At the last attempt there was no more false membrane expelled.

In half an hour an emetic of sulph. cupri. Continue calomel with mercurial plaster to the throat.

24*th.* No better. Pulse quicker and more contracted.

Used probang with the same results as before, three times in succession. The solution being, aq. ℥i; nit arg. (crys.) ʒi. An emetic of alum ʒi, repeated. Suspend calomel.

25*th.* Better.

26*th.* Greatly relieved. Laryngeal stridulous sound almost gone, loud mucous and sonorous rale in both lungs, particularly the right. Profuse perspiration, and urine scanty. ℞. Mur. ammon. grs. iij; tinct. digitalis. ♏ss; ext. hyoscyamus, gr. ¼. Every two hours in solution. Sponge the surface with a solution of salt and water, and frictions with warm flannel.

27*th*. Better in every respect, and from this time he recovered.

It has been said (and with what justice you can determine) that "Physicians have been tinkering at the constitution for two thousand years, and but two specifics are recognized, viz., mercury and sulphur." That the nitrate of silver may prove, when properly applied, a specific in pseudo-membranous laryngitis, I sincerely hope, and from the effects I have observed from it when applied to false membrane appearing on the tonsils and pharynx, I think it not improbable.

Internal Mechanical Obstruction overcome by Mechanical Forces. By Richard H. Townsend, M. D.

At nine o'clock, Saturday evening, December 16th, 1848, I was called in haste to visit Mr. J—— M———, who was then labouring under strangulated hernia. Upon examination, I found an inguinal hernia on the right side, about as large as an ordinary sized lemon, tense, and very painful to the touch, owing to the repeated trials which the patient had made for its reduction, previous to my being sent for. Taxis was then resorted to by myself, but without success. I then ordered a large tub to be brought into the room, into which I placed the patient with his feet projecting outside, and added warm water until it reached his umbilicus. I then placed a ligature upon the arm and bled him from a large orifice thirty ounces, which made a perceptible impression upon the pulse, but without syncope. Then closing the orifice, and while the patient was still in the bath, applied firm and continued pressure to the tumour, and in forty seconds it was reduced. The patient was then taken from the bath, placed in bed, and a truss applied, but owing to its ill fit, a second protrusion took place, and I was again sent for at one o'clock in the morning, to reduce it the second time, which was done with very little difficulty. Ordered a dose of castor oil, to be given at 8 o'clock in the morning and left. Sunday 12 o'clock A. M., the oil having been thrown up and sickness at stomach continuing, gave him half an ounce of the liq. ext. of senna, which was repeated during the evening, but without the desired effect. Monday morning 8 o'clock. Passed a restless night with frequent vomitings of a grayish coffee-ground appearance, a tympanitic state of the abdomen, and constant eructations. During the day gave him three several doses of cream of tartar and jalap, assisted by stimulating enemata, all of which proved equally ineffectual in removing the obstruction.

Tuesday. The vomiting still continues, the abdomen distended, pulse, 120, small and weak, and constant thirst. Gave one grain of calomel every hour, with fomentation and spiced plaster to the abdomen, without the least abatement of the symptoms. At 12 o'clock, midnight, met Drs. Tucker and Goddard in consultation, who coincided with me in the belief that there must be some internal obstruction, and that the patient would in all probability die. Croton oil, however, was given, and to be repeated at short intervals.

Wednesday Morning, 10 o'clock.—Had no sleep during the past night; the croton oil had been thrown up and the vomiting was incessant. Pulse more feeble, insatiable thirst, eructations amounting to hiccough, and all the symptoms of approaching dissolution. I visited him again at 12 of noon, when I found him propped up in bed with the bowl between his thighs, and he still vomiting and retching. I now resolved to try one more expedient, and ordering a quart of ice-cold water to be thrown into the rectum by means of a forcing pump, I drew a sheet from the bed, twisted it into a cord, looped the middle of it over the patient's feet, and suspended him feet uppermost to the ceiling, with the injected fluid still in the bowels. While thus suspended, I kneaded the abdomen with considerable force; he was then let down, when the abdomen evidently appeared much softer, from the fact of the obstruction having been removed. Borborygmus immediately ensued; the vomiting ceased entirely from that moment, and in fifteen minutes the ice water enema came away, bringing with it fæcal matter. During the afternoon gave him two grains of calomel and half a grain of opium every hour, when at six o'clock he had a second evacuation.

Thursday Morning.—Rested well during the previous night. Pulse 90, and all the alarming symptoms disappeared. Gave a purgative enema, which brought away copious evacuations of a most offensive character.

Friday.—Still improving.

Saturday.—Pulse natural, appetite good, and bowels regular.

Sunday.—Discharged well.

PHILADELPHIA, *January* 20, 1849.

Trismus Nascentium. By SAMUEL CHAMBERLAINE, M. D.—*July* 28*th*, 1849.—Martha J. Turbot, æt. four weeks, in the care of a wet-nurse. The mother finding her child's "hands cold, and arms quite purple or black," suspected that the wet-nurse had given it laudanum: last evening she had left it well, in the nurse's hands.

The child was not asleep, nor did it seem heavy and stupid, as if suffering under the effects of laudanum; the eyelids were partly open, and the eyes occasionally turned upwards as if in convulsions; respiration was slow and moaning (the expiration prolonged); it was purely vesicular throughout, and the lungs were fully expanded; pulse distinct.

The complexion was purple, and the veins on its arms very conspicuous. The hands were forcibly contracted, and the thumbs drawn in towards the palms. It refused to suck my finger, which I placed in its mouth, and the mother stated that she could not make it suck. The jaw was not fast closed, but was somewhat stiff when I attempted to introduce my finger. These symptoms reminding me of Dr. Sims' theory of the Cause of Trismus Nascentium,* I examined the occiput and found it *below the parietal bones;* both edges were depressed; the parietals riding over the occipital for half the length of the lambdoidal suture.

I laid it carefully on its side, relieving the occiput of all pressure, and the child immediately began to suck its own lip. A warm bath (that the mother might not think "nothing was done"), and *to keep it carefully on its side,* was the only treatment directed.

Three hours after, I found the child wrapped carefully, after the warm bath, and lying in the mother's arms. All thought it dying. It had "turned blue several times," and became so "whenever the milk was given it." A bluish colour under its eyes was very conspicuous. The mother milked her breast, and poured a spoonful into its mouth; immediately the lips, face, and forehead became blue, and it seemed almost strangled in the attempt to swallow; *but this "blue spell" was declared by those around to be much less severe than the "spells" in my absence.* The difference was this; that I held the child myself, and supported the side of its head; the mother had held it upon her arm, "*diagonally,*" and the weight of its head came chiefly upon the occiput; she was holding it thus, when I took the child from her, so this is not a mere inference.

---

* American Journal of Medical Sciences, April, 1846.

The pupils were contracted now, and the child breathed with a croupy inspiration.

Treatment.—To keep it on a pillow, and on its side carefully.

Third visit, about three hours later.—It has had one or two more "blue spells," but none so severe as at the last visit. The mother had again taken it and held it, as before, on her arm diagonally; the occiput bearing the weight of its head in some degree.

On my taking it from her, raising it by the feet, and with my thumb and forefinger at the back of its neck (as with a child at birth), complete opisthotonos took place; the head was thrown strongly backwards, and remained so. I had incautiously made *greater pressure* upon the occiput; for not only the head, but part of the body was now supported by it. The child made a feeble effort at defecation, and passed some wind. There was no more stridulous breathing.

Treatment.—I now laid it myself carefully on the pillow, and insisted that it should not be taken up for any purpose, but feed while lying. A teaspoonful of castor oil was the only medicine ordered.

July 29*th.*—The mother reports one or two "spells" since the last visit; but that at 12 o'clock in the night a change for the better took place. She suckled it in the night. I found the child lying accurately on its side, the whole side of the head and face applied to the pillow, and the occiput relieved of all pressure. Her breathing free, easy, and regular; her hands both open; the skin red and of a healthy colour; and no appearance whatever of impeded circulation.

A careful examination of the occiput shows that it has risen *very nearly* to the level of the parietal bone; there is still, however, a slight depression, and it is still *below*, not over-riding them. I therefore explained the danger, and directed the mother to keep it still carefully on its side.

August 11*th.*—The child has been under occasional notice up to this date. It remains well. The occiput is still below the parietals, as may be detected by a *careful* examination; it is much nearer the level than when I first felt the head. Having frequently seen the mother carrying the child with its head always raised, and never otherwise, I conclude that her careful observance of the directions, has prevented any renewal of the attack. Her removal has prevented any further observance of the case.

Intermittent Fever. By Dr. N. Ward, Burlington, Vermont.—While in Ceylon, I treated many cases of fever and ague most satisfactorily, with a mixture of oil of turpentine and castor oil, in the proportion of one to two drachms of the former to one ounce of the latter, and administered in a mildly cathartic dose at the beginning of every cold stage. Where relief was not promptly obtained, there were generally present signs of biliary derangement, indicating the moderate use of calomel or calomel and ipecac., after which a dose or two of the mixture usually completed the cure. This was used in cases of long standing, as well as in recent ones; and in one case of enlarged spleen with good effect.

Dysmenorrhœa.—Dr. N. Ward, of Burlington, Vermont, reports that in several cases of painful menstruation, he has obtained the best results from the use of ¼ gr. of sulph. ferri, with a slightly laxative dose of sulph. magnesia, every day during the interval of the monthly periods, or for the last ten days of the interval.

DOMESTIC SUMMARY.

Successful Amputation at the Shoulder-Joint.—Dr. Paul F. Eve relates (*South. Med. and Surg. Journ.*, Sept. 1849,) the case of a boy, about eight years of age, who, six months before he was seen by Dr. E., had sustained a compound comminuted fracture of the right arm from a fall. There were existing an enlargement of the whole length of the humerus; a stiff shoulder-joint; two fistulæ, one about the insertion of the deltoid muscle, and the other at the head of the bone; a probe would pass, as it were, through the shoulder-joint, and in the direction of the bone, encountering rough or denuded surfaces; from both openings there was a pretty copious discharge of ill-conditioned pus.

The propriety of an operation having been decided upon in consultation, and the patient placed under chloroform, an incision from the acromion process of the scapula was made through the deltoid muscle down to the bone, laying open freely the upper fistula. The humerus thus exposed, was felt extensively involved in the disease (necrosis), and according to previous counsel, amputation at the shoulder-joint was now attempted. In performing this, an unexpected difficulty occurred—this was encountering an intimate union of the head of the bone to the glenoid cavity. In the effort to disarticulate at the joint, it was found that the knife did not and could not be made to pass around the upper extremity of the humerus—the joint was then attacked from the opposite side, but with no better success. Having confidence in the knife (English), the original position was resumed, and the head of the bone was cut through, leaving the part above its anatomical neck in the glenoid cavity of the scapula. This was now carefully dissected out by a scalpel, the bond of union being intimate and complete through the intervention of what was supposed to have been fibrin or the plastic matter of the blood. The knife passed through what originally was the epiphysis of the bone, and its edge was uninjured.

The whole humerus was found necrosed, the old bone was confined in an effort of nature to form a new one. The sequestra could only be removed by extensive incisions and forcible efforts, and the bone presented throughout a worm-eaten aspect. It was not a part, but the whole of the bone, which was diseased.

The boy had a good recovery, leaving for home in the cars a week after the operation.

Spiritus Pyroxylicus in the Treatment of Diarrhœa and Dysentery. By David W. Yandell, M. D., (*Western Journ. Med. and Surg.* September, 1849.)—Dr. Yandell's attention was first called to the use of pyroxylic spirit or medicinal naphtha in diarrhœa, by an article by Dr. Lavirotte, of Lyons, in the *Gazette des Hopitaux*. In the present paper, Dr. Y. details the result of his trials with the article. He gives brief accounts of 23 cases—16 of diarrhœa and 7 of dysentery—treated by this agent, and the results are certainly favourable. Christison states the dose of the article as five minims; this Dr. Yandell thinks is too small a dose in diarrhœa and dysentery. He commenced with doses of six drops, three times a day; but he was, in many cases, obliged to increase the dose before any good results were manifest. He believes that it is most frequently efficacious when given in doses of twenty drops at intervals of three hours.

Touching the modus operandi of the spts. pyroxylicus, Dr. Yandell confesses himself totally at a loss to determine. I can but ask (he says) with Dr. Lavirotte—Does this medicine act like opium and the other calmants, as alum and columbo, and the other astringents, as nitrate of silver, by substitution, or rather has it a special action which modifies the intestinal secretion? It is too easily borne to warrant its being compared to nitrate of silver; and its antispasmodic properties are, to say the least, very insignificant; while its nauseous, sharp, and bitter savour would seem to indicate that it exercised an astringent influence.

On this subject Christison speaks as follows: "Its actions have not yet been carefully investigated; but it seems to be narcotic, sedative, and calmant. It certainly possesses the property of allaying the cough and febrile excitement of phthisis pulmonalis; but general experience has not borne out the sanguine hopes entertained by Dr. Hastings, of its efficacy as a remedy in that disease. I can amply confirm all that has been said of it as an anti-emetic remedy in cases of chronic vomiting; for in cases of this affection, depending on both functional and organic diseases, I have frequently seen the vomiting arrested or greatly mitigated by pyroxylic spirit. Even creasote has appeared to be scarcely as efficacious."

Wound of the External Carotid Artery—Ligature to the Common Carotid.—Dr. Geddings relates (*Charleston Med. Journal*, September, 1849,) a case of severe wound on the right side of the neck, between the mastoid process and the neck of the jaw.

The point of the instrument penetrated within the concha of the ear, near the antitragus; and partially slitting the lobus, which was drawn down by the force of the blow, it passed deeply with the blade in a transverse direction, as regards the neck, between the mastoid process and the neck of the jaw, severing a portion of the parotid gland, the external carotid, and probably either the internal carotid or internal maxillary arteries, or both. The wound was about an inch in length, and had bled so profusely, that before the patient could be conveyed to Dr. Boylston's residence—distant about a hundred yards—he was already nearly pulseless, and was, besides, insensible from the effects of intoxication.

Dr. Boylston promptly arrested the hemorrhage, by pressure upon the wound with the thumb; but the pressure being removed for an instant, on Dr. G.'s arrival, to enable him to examine the wound, the blood gushed forth again, with such force, as to render it necessary to reapply the pressure immediately. A temporary compress was arranged of three bottle-corks, placed parallel, and rolled in soft linen, which was secured upon the part by several turns of a roller bandage, about the head and face. This means, aided by slight pressure, effectually commanded the hemorrhage, until Dr. G. could return home, to procure an artery compressor. Having provided himself with this instrument, he applied one pad on the back part of the neck, in the hollow between the spinous and the transverse processes of the spine, on the opposite side, and the other upon the course of the common carotid artery of the injured side. By turning the key of the instrument, it was found that ample pressure could thus be made, to effectually impede the transit of the blood through the vessel, and as the patient was insensible, he made no struggles to interfere with the objects had in view. In this manner, a perfect temporary command over the hemorrhage was obtained.

Between three and four hours after the accident, sufficient reaction having taken place, Dr. Deas, the regular medical attendant of the patient, applied a ligature to the common carotid artery in the omo-hyoid angle of the cervical region. During the whole time, the patient was in such a profound state of intoxication, that he had no consciousness of what was transpiring, and it was only after a profound sleep that he awoke to a sense of his situation. The case had gone on most favourably up to the date of the report, at which period the ligature had not yet come away.

Asiatic Cholera successfully treated by Chloroform.—Dr. Anthony Bournonville relates (*Medical Examiner*, Aug. 1849,) eleven cases of cholera, all but one successfully treated. The following case will illustrate the treatment persued by Dr. Bournonville.

"Case 2. George C———, undertaker, Vine and Fifth streets, was called upon to lay out for burial a patient who had died of Asiatic cholera. C. returned to his work after he had finished, took a glass of beer, and soon after was obliged to go to the privy, where he had a succession of copious watery evacuations. On passing through the yard to go into the dwelling-house, he fell prostrate on the pavement, stiff, cold as ice; cold perspiration flowed freely from his body (melting, as it were), pulseless, skin shrivelled, extremities in less than half an hour were perfectly blue to his knees and elbows; tongue cold, breath cold, eyes sunken with livid circles about them, lips blue, excessive cramps in the stomach feeling like knots, nose contracted, ghastly appearance.

"*Treatment.* Chloroform ♏vj, turpentine gtt. 40, were given in a glass of brandy and water, which caused immediate partial revival; the patient expressed himself much better; in half an hour the dose was repeated, which caused entire revival. Sinapisms were applied to the calves of the legs and stomach; was well rubbed with cayenne pepper and brandy; mustard and cayenne pepper, flowers of sulphur, heated bricks were applied to various parts of the body; ordered afterwards the following mixture, of which he took a teaspoonful every half hour.

"℞. Chloroform,* gtt. xxx; water, ℥ij. Mix.

"Saw the patient two hours after; pulse good but rather feeble; heat of surface gradually returning; no cramps, no nausea; extremities of hands and feet still blue; face presenting a natural appearance; prescribed calomel, grs. v, inspissated ox-gall, grs. x, made into four pills, of which he took two at once, and repeated two hours after; these produced good bilious evacuations; the rubbings were continued to hands and feet. The next day I found the patient much better, the blueness had entirely disappeared, the pulse stronger; some slight excitement present, some difficulty of breathing, slight congestion of the lungs. He was bled, and on the fourth day was entirely well with the exception of debility, for which quinine gr. ss. every half hour was given, with other tonic treatment. The patient is now well."

P. Brady Esq., of Harrow, relates, in the *Medical Times*, Aug. 12th, 1848, a case of cholera, successfully treated by a mixture of chloroform and turpentine, followed by calomel and ox-gall. In a subsequent number of the same journal, he relates a second case of cholera, in which he gave the chloroform with entire success. In a still later communication, in the same journal, Oct. 14th, he strongly urges the advantages of the internal use of chloroform. He gives several formula for its administration; the latest is the following (*Med. Times*, July 7th, 1849). ℞. Chloroform, ♏xx ad xl; mucil. gum. acac., ℥iss; syrupi symp., ℥ss; sp. vini rect., ʒj; aq. puræ, ℥iij.

The chloroform should be dropped into the spirit of wine, and the solution added to the mucilage and syrup in a bottle. This should be shaken, and the water added by degrees. A fourth part of the mixture is an ordinary dose for an adult.

Successful Amputation at the Shoulder-Joint.—Dr. Wm. Byrd Page relates (*Medical Examiner*, Aug. 1849,) a case of successful amputation of the shoulder-joint performed by him, on a man 56 years of age, labouring under abscess of the shoulder with disease of the humerus, and exhausting discharges, the result of injury received fifteen years before. The glenoid cavity, with its cartilaginous lining and margin, was found to be entirely unoccupied, with the synovial membrane smooth and healthy, which is not in accordance with the usual belief that an articular cavity is filled up, when the head of the bone is removed. The patient made a good recovery.

Wound of the Heart—the Patient living ten Days.—Dr. W. S. Bowen presented to the New York Pathological Society the specimen, and read the notes of the following very interesting case:—

D. R., aged 21, admitted December 13th, 1848, with a stab in the left mammary region, near the sternal end of the fourth rib, about half an inch removed from the sternum; received two days before admission.

Dec. 17*th.* Patient complains of an acute pain near the situation of the wound; has some febrile excitement; respiration slightly accelerated. The friction sounds of pleurisy, and the evidences of moderate effusion are present. Venesection. Tart. antim.

---

* "The chloroform mixture is prepared some few days beforehand, as follows: Thirty drops are dropped into a two-ounce vial, which is afterwards filled with warm water, and tightly corked—this is allowed to cool; before giving the necessary dose be careful to shake well the mixture."

19*th.* Pain greatly mitigated; febrile excitement abated.

20*th.* Evidences of effusion still present; some roughness of the first sound of the heart.

22*d.* Fell on the floor of the ward, while crossing it, in a state of syncope; complains of intense pain and a sense of constriction across the chest; pulse feeble, frequent, and intermitting, the intermissions occur after every third pulsation; extremities cold; skin blanched; cold, clammy perspiration over face and body; extreme thirst.

He became comatose, with dilated, insensible pupils and stertorous breathing, and died December 23d.

Examined Nine Hours after Death.—On removing the cartilages and ribs, the left pleural cavity was discovered to be filled with blood; slight inflammatory redness of the costal pleura, and the lung was compressed to one-third its natural size. The pericardium was also filled, and the heart pushed over to the right side. Removing the heart, with its appendages, the pericardium was found perforated within the mediastinal space two inches below its reflection from the vessels to the heart. Around the orifice, for several inches, were the evidences of inflammation, both on the internal and external surfaces, to wit, capillary injection and shreds of coagulable lymph; this was more particularly the case upon its internal surface. The heart itself was found perforated half an inch to the right of the septum; the perforation entering the right ventricle about a line below the anterior semilunar valve of the pulmonary artery, passing entirely through this ventricle, and entering the septum ventricularum just at the base of the posterior valve, and coming out into the left ventricle at the orifice of the semilunar aortic valves, one of which was grazed. These orifices were lined with coagulable lymph; and, without displacing it, admitted the introduction of a good sized probe.—*New York Journ. Med.*, Sept. 1849.

Wounds of the heart, when penetrating its cavities, are always fatal, though the patient often lives for a considerable period after the accident. In the number of this journal, for August, 1829, there is an interesting paper on the subject, by Dr. J. R. Coxe, in which the learned author has collected a number of cases from various sources. In some of these, life was prolonged for sixteen or seventeen days, but they ultimately proved fatal. A large collection of cases are also to be found in the *Dictionnaire des Sciences Médicales.*

Case of Spasms and Partial Trismus, from the prick of a Needle under the Thumb Nail. By S. P. Hildreth, M. D., of Marietta, Ohio.—Mrs. H. B., of Marietta, aged 24 years, of a very nervous temperament, while sewing on the 15th Sept., 1824, pricked her left thumb, with the needle, under the nail. Little notice was taken of so trifling an injury, until the 17th, when it became tender and painful, but without any marks of inflammation. The pain now began to ascend the arm along the course of the veins, and was so severe as to become alarming. I was called on for advice, and directed the part affected to be bathed with warm spirits of turpentine and laudanum—while she was to take inwardly, vitriolic ether and laudanum sufficient to allay the pain. By night, a few hours after my first visit, the pain had increased, and began to affect the muscles of the face and neck on the wounded side, to such a degree as to cause serious fears of trismus or lock-jaw. The doses of laudanum and ether were increased to the extent of 120 drops every hour, while a liniment of ol. succinum, and olive oil and laudanum was rubbed hot on the arm and neck, with a thick covering of warm flannel, as cold seemed to increase the pain very much. On the 18th a blistering plaster was applied round the thumb, with the expectation of relieving the irritation in the wounded nerve, by a new action excited in the neighbourhood. This, with the assistance of the warm bath, had a very beneficial effect in allaying the pain and spasmodic tendency of the disease. By continuing the laudanum in large doses, sometimes to half an ounce, the pain in the course of a week was so far subdued, as only to be troublesome occasionally.

The disease now put on more the form of hysteria; attended at times with delirium and fits of sobbing. For this, a moderate venesection was prescribed, with manifest advantage. She was also put on a course of carb. of iron, with the intention of strengthening the nervous system, as well as the general health, which had become considerably impaired. By the first of November, the pain had much abated, and the symptoms left her, but the whole arm had become so irritable, that the least exposure to cold was painful. To overcome this sickly irritability, a cold shower bath was directed every morning, or even at night, if much painful, and with decided benefit; the arm remaining easy and comfortable for hours after the application of the water. About the middle of the month electricity was tried, by gentle shocks to the hand and arm, but with no very decided benefit. Near this time she became pregnant, which probably occasioned several severe fits of hysteria. In December, a painful affection and inflammation of the face and jaws came on, which ended in suppuration, and was discharged from the gum of the left side. This, with the change in the system consequent on pregnancy, relieved the train of spasmodic symptoms, which had so long pursued her.

From this period she continued in comfortable health till June following, when she was attacked with pain in the left side, attended with nervous irritation. For this a moderate bleeding was directed, followed with nervine medicines. About the middle of July she was delivered of a dead child, her first accouchement. The fatigue of the labour, and depression of mind from the loss of the infant, was followed by hoarseness, attended with severe pain in the breast, difficulty of breathing, and a cough which sounded like the barking of a small dog, of a highly croupy character, without expectoration. This attack began the second night after her confinement. To relieve these alarming symptoms, two or three bleedings were required, and as the blood was highly inflammatory, they were pretty free; a blister was applied to the breast; febrifuge and expectorating medicines, with mucilaginous drinks were given, accompanied with spare diet of rice-water. This course afforded relief in two or three days; it also checked the flow of milk so much that a small puppy kept her breasts free and soft. When she had recovered from this attack, there soon after commenced a severe pain in the back part of the head; it was of a neuralgic character, and so acute as to require large doses of opium to afford any relief. This remedy was used so often, and so regularly, that the worst consequences were feared from its continuance. Thinking it might arise from debility, as the fits of pain were periodical, large doses of sul. quinine were given a few hours previous to the accession. It had a fine effect for a few days, in preventing the return of the paroxysms; but in the course of a week it lost its influence over the complaint. Riding in a carriage was now tried with the happiest effect; the pain left her after travelling a few miles, and by continuing it some days, accompanied by a change in her place of residence, the pain in the occipital region left her, and did not again return. Through August and September her health improved, but at the commencement of cold weather—the last of October—the pain returned; but was now seated in the sternum, apparently directly under the bone, or in the mediastinum behind it. It was attended with little or no fever, but considerable rigours—was acute, and felt like something gnawing the flesh. A large blister relieved it in a few days, but after a week or two the same pain attacked the right side, about midway between the scrobiculus cordis and spine. It was severe, and accompanied with so much swelling of the affected part, that she feared the formation of an abscess. I did not see her until two or three days after the attack; a neighbouring physician visited her, and calling the disease a pleurisy, bled and blistered her. The blood which I saw had no inflammatory appearance; tongue not coated, heat and thirst both absent. The diagnosis was that the pain arose from the same cause as that formerly in the head and breast; nervous irritation, probably the effects of the action excited in the system from the prick of the needle, and now wandering from place to place like rheumatism. With this view, I gave a decoction of valerian and eupatorium perfol., producing free perspiration, with occasional doses of the comp. tinct. of bals. tolu. A seton, or issue was made in the side, over the seat of the pain, with directions to make it discharge freely. The intention of the issue was to divert irritation from that spot and prevent the fixing of disease on a vital part, by the continued action of pain, her lungs having been feeble for some months, with inclination to hoarseness. The pain left her as soon as a free discharge was established; and by the use of tonic remedies her health was greatly improved. The lady lived several years after this, but finally died of consumption.

The main object in the above case, is to show from how trifling a source nervous irritation may be excited in certain female temperaments, and under what various forms and protean shapes it exercises and tries the discrimination and diagnostic powers of the physician.—*Ohio Med. and Surg. Journ.*, Jan. 1849.

Child killed by a Drop of Laudanum.—Dr. H. V. Wooten has recorded in the *Southern Med. and Surg. Journ.*, (July, 1849,) the case of a healthy female child, five days old, to whom the mother gave a single drop of laudanum to relieve griping. In thirty minutes the breathing became slow and stertorous, with insensibility, and, notwithstanding all efforts to rouse her, she died in 11 hours. The laudanum was dropped from an ounce vial, in which there was but about ten drops. It had been stopped with a piece of twisted paper, and been hanging up about a year; all the inner surface of the lower part of the vial was incrusted with opium, and the remaining laudanum was heavily charged with the deposit resulting from evaporation.

Statistics of the Medical Colleges of the United States, for the Session of 1847–8.

	Number of Students.	Number of Graduates.
University of Pennsylvania,	499	199
Medical College of Harvard University, Boston,	126	25
College of Physicians and Surgeons, New York,	176	39
Medical Institute of Yale College,		
Medical School of Maine (Brunswick),	74	14
Vermont Medical College (Woodstock),	105	
Medical College of Castleton, Vermont,		23
Dartmouth Medical College (N. H.),		
Berkshire Medical Institution,		26
Med. Dep. Univ., City of New York,	412	134
Albany Medical College,	101	22
Geneva Medical College,	63	18
Med. Dep. University of Buffalo,	93	19
Jefferson Medical College,	497	188
Med. Dep. Pennsylvania College,		36
Philadelphia College of Medicine,	91	21
University of Maryland,	190	64
Washington University of Baltimore,		
Med. Dep. of Columbian College (Washington),		
University of Virginia,		
Med. Dep. of Hampden Sidney College (Richmond),		
Med. College of State of South Carolina,	141	45
Med. College of Georgia (Augusta),	133	36
Med. Dep. of Univ. of Louisiana (New Orleans),		
Memphis Medical College,		
Med. Dep. of Transylvania College,	120	46
Med. Dep. University of Louisville,	331	81
Med. College of Ohio (Cincinnati),	175	50
Starling Medical College (Columbus),	173	50
Med. Dep. Western Reserve College (Cleveland),	251	
Indiana Medical College (Laporte),		
Med. Dep. Illinois College,		
Rush Medical College (Chicago),	100	18
Med. Dep. St. Louis University,	102	22
Med. Dep. University of Missouri (St. Louis),	154	38
Indiana Central Medical College,		

On the Use of the Ethereal Solution of Gun Cotton in the Cure of Erectile Tumours without Operation. (*N. W. Med. and Surg. Journ.*, Sept. 1849.)—Struck with the contractile power possessed by the ethereal solution of gun cotton, Dr. Brainard, of Chicago, was induced to test its application to the surface of erectile tumours.

In the case of a nævus, of the size of a very large strawberry, situated on the anterior fontanelle of a young infant, Dr. B. covered the tumour with a solution of gun cotton; and although it was much elevated above the surface, he had the satisfaction of seeing it brought by the contractile power of the liquid in drying, to a level with the sound skin. It was allowed to remain several weeks, and then a fresh application made; and at the present time scarcely any trace of the nævus remains, although but two applications have been made.

The next case was that of a young child, with a nævus ¾ of an inch in length, and ½ an inch in breadth, situated beneath the right eye. This, at birth, was scarcely perceptible; but, in six months, had acquired the size mentioned, and was rapidly increasing. In order to avoid the irritation resulting from its proximity to the eye, the application was made during the sleep of the infant, and was required to be renewed twice a week, on account of its becoming loosened. After two months use, the nævus is scarcely perceptible, and the use of the solution has been for some time discontinued.

It is not improbable that, by preventing the necessity of resorting to operations in such cases, this liquid may find a use more important than any to which it has before been applied.

Cholera in the United States.—During the past summer, cholera has prevailed over a very large portion of this country, in some places affecting a large portion of the population, and with great fatality. New Orleans and New York appear to have been the principal foci from which the disease spread. Commencing at the first-named city, it extended up the Mississippi, and all its tributaries, nearly to their sources. From New York, it seems to have extended up the North River to Albany, thence along the great route of travel westwardly, to Buffalo, &c. Boston, Montreal, &c., also suffered from a visitation; but whether they constituted distinct foci, or the disease extended to them from New York, we are unable to say.

We do not possess, at present, the materials for writing a history of the cholera in the United States, but we have collected some interesting statistics which may constitute a useful contribution for that purpose.

Philadelphia.—The following table exhibits the daily progress of the disease in Philadelphia, during the past season. It will be perceived that the disease commenced on the 30th of May. The first case was that of a man who came to this city from New York, labouring under the disease; no connection could, however, be traced between this and the subsequent cases, nor is there any ground to believe that the early cases were connected one with the other.

The disease reached its height on the 14th of July, a period of 46 days, when 84 cases were reported, and has since gradually declined, and at this moment may be considered as extinct.

By reference to the statistics of the cholera in this city in 1832, at p. 268, *et seq.*, of our number for November, 1832, it will be perceived that the first case was reported on the 11th of July, and the last on the 12th of September, a period of 65 days; whilst in the present year, the first case was reported 30th of May, and the Board ceased to report on the 18th of August, a period of 82 days. Though the disease prevailed for a longer period in 1849 than in 1832, and the population has increased probably over 30 per cent., the number of cases and of deaths during the two periods were nearly the same. In 1832, the cases being 2314, and deaths 754; while in 1849, the cases were 2221, and deaths 744.

Table exhibiting the Progress of Cholera in Philadelphia during the Recent
in each of the Public Hospitals, Prisons, &c.

		PRIVATE PRACTICE.																							
		City.		Southwark.		Kensington.		Spring Garden.		Moyamensing.		Northern Liberties.		Richmond.		Passayunk.		Penn District.		West Philadelphia.		Residence not stated.		Coroner.	
1849.		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
May	30	-	-	1	1	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-
	31	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
June	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-
	13	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	14	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	15	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	16	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	17	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	-	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19	2	2	2	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
	20	2	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	21	-	1	5	1	1	-	-	-	2	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-
	22	3	1	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	2	-	-	-	1	1	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-
	24	-	-	1	1	-	-	1	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-	-	-
	25	4	2	8	2	5	2	1	1	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-	-
	26	3	3	2	1	9	4	2	1	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	27	10	2	14	3	8	2	5	3	1	-	4	2	-	-	-	-	-	-	-	-	1	-	-	-
	28	12	3	11	3	8	4	2	1	-	-	5	-	-	-	1	1	-	-	1	1	-	-	-	-
	29	11	3	17	2	2	-	5	1	6	3	4	1	-	-	-	-	-	-	1	-	1	-	-	-
	30	15	7	13	1	4	2	2	1	1	-	5	4	6	2	-	-	1	1	-	-	1	-	-	-
July	1	4	4	6	2	3	1	1	3	2	1	2	-	1	2	-	-	-	-	-	-	-	-	-	-
	2	14	5	12	4	8	3	4	1	9	1	5	3	1	-	-	-	-	-	-	-	-	-	-	-
	3	9	3	7	-	9	2	7	3	16	2	3	1	3	1	1	-	-	-	-	-	-	-	-	-
	4	10	1	5	2	1	-	3	1	10	3	1	1	1	-	-	-	-	-	-	-	-	-	-	-
	5	7	4	3	2	11	2	3	1	3	1	7	2	1	-	-	-	3	-	-	-	-	-	-	-
	6	7	2	6	1	-	-	-	-	2	-	3	-	-	-	-	-	1	-	-	-	-	-	-	-
	7	13	2	7	1	-	-	3	-	3	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-
	8	7	4	-	-	-	-	-	-	1	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-
	9	4	3	10	2	3	-	1	-	3	2	3	1	-	-	-	-	-	-	-	-	-	-	-	-
	10	13	1	4	-	8	1	-	-	3	2	1	1	-	-	1	1	-	-	-	-	-	-	-	-
	11	20	2	16	5	5	1	1	-	13	4	1	-	2	1	-	-	-	-	-	-	-	-	-	-
	12	17	5	7	1	8	-	1	-	8	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	13	15	4	6	1	16	6	4	1	5	-	5	1	1	-	3	-	1	-	-	-	-	-	-	-
	14	8	2	9	-	7	-	3	1	7	3	9	6	3	-	-	-	-	-	-	-	-	-	-	-
	15	11	2	4	-	2	-	2	2	3	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-
	16	12	1	4	1	1	-	1	-	6	1	6	2	1	-	-	-	-	-	2	1	-	-	-	-
	17	16	10	1	1	13	2	5	1	-	-	7	-	1	-	-	-	1	1	-	-	-	-	-	-
	18	14	3	9	-	12	3	7	-	8	-	5	2	-	-	-	-	-	-	-	-	1	-	-	-
	19	12	2	2	2	6	1	5	1	8	1	2	-	-	-	-	-	1	-	-	-	-	-	-	-
	20	11	4	1	-	8	3	3	-	5	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-
	21	5	3	7	2	6	-	-	1	2		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22	2	2	-	-	1	-	-	-	4	3	-	-	1	-	-	-	-	-	1	-	-	-	-	-
	23	10	2	4	-	-	-	2	1	4	2	1	1	2	1	-	-	1	-	-	-	-	-	-	-

Epidemic, showing the Number of Cases and of Deaths in each District, and Arranged from the Official Documents, by the Editor.

HOSPITALS.																										Total.	
City.						Southwark.		Moyamensing.		Northern Liberties.		Richmond.		Bush Hill.		Almshouse.		County Prison.		West Philadelphia.		Kensington.		Spring Garden.			
Cherry Street.		Pine Street.		South Street.																							
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	10
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	18
-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	4	3	-	-	-	-	-	-	-	-	23	20
-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	10	5	-	-	-	-	-	-	-	-	65	25
3	1	-	-	-	-	-	-	-	-	-	-	-	-	2	1	7	7	-	-	-	-	-	-	-	-	66	21
2	4	-	-	-	-	-	-	-	-	3	-	-	-	1	1	8	7	2	-	-	-	-	-	-	-	47	20
-	-	-	-	-	-	1	-	7	3	1	1	-	-	-	-	5	3	-	-	-	-	-	-	-	-	53	19
1	-	-	-	-	-	-	1	5	1	-	1	-	-	-	-	8	7	1	-	-	-	-	-	-	-	34	12
-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	9	4	-	-	-	-	-	-	-	-	40	9
1	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	8	4	-	-	-	-	-	-	-	-	23	10
-	-	-	-	-	-	1	-	3	2	-	-	-	-	1	1	9	9	1	-	-	-	-	-	-	-	39	20
2	1	-	-	-	-	1	-	1	1	1	-	-	-	-	-	11	6	-	-	-	-	-	-	-	-	47	15
2	3	-	-	-	-	4	-	3	4	2	1	-	-	1	-	13	11	-	-	-	-	-	-	-	-	83	32
3	-	-	-	-	-	3	2	1	-	3	-	1	-	3	1	24	13	-	-	-	-	-	-	-	-	80	26
3	-	-	-	-	-	2	-	3	1	-	1	-	1	-	-	17	14	-	-	-	-	-	-	-	-	81	30
1	1	3	1	-	-	2	-	5	3	4	2	-	-	2	1	20	12	-	-	-	-	1	-	-	-	84	32
-	1	1	1	-	-	-	-	2	1	3	1	-	-	1	-	21	7	-	-	-	-	-	-	-	-	54	16
-	-	1	-	-	-	1	2	1	-	1	-	-	-	2	1	20	14	-	-	-	-	-	-	-	-	59	23
1	-	1	-	-	-	1	-	2	-	-	1	1	-	2	-	20	14	-	-	-	-	1	1	-	-	73	31
1	1	-	-	1	-	-	-	2	2	1	2	-	-	1	-	14	9	-	-	-	-	-	-	-	-	76	22
1	-	-	-	-	-	3	-	3	-	2	1	-	-	3	-	5	14	-	-	-	-	-	-	-	-	53	22
-	-	-	-	1	-	-	-	1	-	3	-	-	-	1	1	10	11	2	-	-	-	-	-	-	-	49	20
-	-	1	-	-	-	3	1	-	-	-	1	-	-	1	1	6	5	-	-	-	-	-	-	-	-	31	14
1	-	1	-	-	-	-	-	4	-	2	1	-	-	-	1	12	5	-	-	-	-	-	-	-	-	29	12
1	1	-	1	-	-	-	-	2	-	1	1	-	-	-	-	5	9	-	-	1	1	-	-	-	-	34	20

PRIVATE PRACTICE.	City.		Southwark.		Kensington.		Spring Garden.		Moyamensing.		Northern Liberties.		Richmond.		Passayunk.		Penn District.		West Philadelphia.		Residence not stated.		Coroner.	
1849.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C	D.	C.	D.
24	9	-	10	1	4	2	3	-	8	4	4	1	3	-	-	-	-	-	-	1	-	-	-	-
25	3	-	1	-	9	3	3	-	6	1	7	1	1	1	-	-	1	-	-	-	-	-	-	-
26	6	2	1	-	8	-	2	-	2	-	7	2	-	-	2	-	-	-	-	-	-	-	-	-
27	9	2	3	-	3	2	1	-	3	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-
28	2	2	2	-	-	1	3	1	1	1	1	-	-	-	-	-	-	-	2	2	-	-	-	-
29	6	5	4	3	-	-	2	1	6	-	2	-	-	-	-	-	-	-	2	1	-	-	-	-
30	7	4	4	-	3	1	4	1	1	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-
31	6	3	4	-	2	-	2	-	3	-	3	-	-	-	-	-	-	-	6	2	-	-	-	-
August 1	3	1	2	-	2	-	-	-	1	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-
2	-	1	5	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
3	2	-	1	-	1	-	1	-	4	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-
4	1	1	2	-	1	1	-	1	1	-	1	-	-	-	-	-	-	-	2	1	-	-	-	-
5	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-
6	1	1	4	1	-	-	-	-	3	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
7	1	-	4	-	4	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	3	-	2	-	2	-	1	1	3	1	-	-	-	-	-	-	3	2	-	-	-	-
9	1	1	3	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
10	-	-	5	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-
11	3	1	4	-	-	-	1	2	1	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
12	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	1	3	4	3	-	-	-	-	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
14	6	-	-	-	1	-	1	-	2	1	2	2	-	-	-	-	-	-	-	-	1	-	-	-
15	3	-	1	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	1	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	1	-	-	-	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	388	127	276	51	218	54	108	33	194	52	147	38	39	13	10	3	14	4	21	11	6	1		

The following table exhibits the total weekly mortality in Philadelphia, during the past seventeen weeks, with that from bowel complaints, and also the same during the corresponding period of last year, as a means of comparison, and shows the influence of the disease on the whole mortality. It will be perceived that, not only is the whole mortality increased, but that, independent of cholera, the mortality from other bowel affections is larger, and even that from other diseases is increased. Thus, in the week ending 21st July, when the epidemic was at its height, the total mortality was 505 against 182 for the corresponding period of last year. The total from bowel affections was 327 against 67 for last year. If we subtract the number of deaths from cholera from the whole number from bowel diseases, it gives the mortality from the latter 132 against 67 last year. Again, if the deaths from bowel complaints be taken from the total mortality, it will give the mortality from other diseases than bowel complaints during the week ending 21st July, 1849, 178, and for the corresponding period of last year 115.

HOSPITALS.																											
City.						Southwark.		Moyamensing.		Northern Liberties.		Richmond.		Bush Hill.		Alms House.		County Prison.		West Philadelphia.		Kensington.		Spring Garden.		Total.	
Cherry Street.		Pine Street.		South Street.																							
C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
1	-	1	1	-	-	3	-	5	1	1	1	-	-	-	-	12	6	-	-	-	-	1	-	-	-	65	18
-	-	-	-	-	-	-	-	3	2	-	-	1	-	-	-	5	6	-	-	-	-	1	-	-	-	41	14
1	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4	5	-	-	-	-	1	-	-	-	38	9
-	-	-	-	-	-	4	-	2	1	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	34	8
1	-	-	-	1	-	3	-	1	-	-	-	2	-	-	-	5	6	2	-	-	-	-	-	-	-	26	12
1	1	-	-	-	1	2	-	6	-	3	-	1	1	-	-	5	3	21	4	-	-	-	-	-	-	61	20
-	-	-	-	-	-	1	-	5	-	1	1	-	-	-	-	4	2	4	3	-	-	-	1	-	-	39	13
2	-	-	-	-	-	4	1	2	-	5	1	-	-	-	-	-	1	-	4	-	-	-	-	-	-	39	12
1	-	-	-	-	-	1	-	1	-	1	1	-	-	-	-	-	-	3	-	-	-	2	-	-	-	19	4
-	-	-	-	-	-	3	-	4	-	2	1	-	-	-	-	-	-	3	1	-	-	-	-	-	-	19	3
-	-	-	-	-	-	-	-	5	-	1	-	-	-	-	-	3	3	2	2	-	-	1	1	-	-	23	8
-	-	-	-	-	-	2	-	1	-	-	1	1	-	-	-	2	-	3	1	1	-	2	1	-	-	19	7
-	-	-	-	-	-	3	-	1	-	2	-	-	-	-	-	-	-	1	2	-	-	1	-	-	-	13	2
-	-	-	-	-	-	2	-	7	-	-	-	1	1	1	-	-	-	-	-	-	-	1	-	-	-	24	3
-	-	-	-	-	-	2	1	4	1	-	-	-	-	-	-	2	-	5	-	-	-	-	-	-	-	24	2
-	-	-	-	-	-	4	-	3	1	1	-	1	-	-	-	-	1	1	1	-	-	2	2	-	-	26	9
-	-	-	-	-	-	3	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	13	3
1	1	-	-	-	-	1	-	4	-	-	1	-	-	-	-	1	-	4	-	-	-	-	-	-	-	16	3
-	-	-	-	-	-	-	-	2	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	18	4
1	1	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	7	1
-	-	-	-	-	-	-	1	3	1	-	-	1	-	-	-	-	-	5	1	-	-	-	-	-	-	17	10
1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	3
2	1	-	-	-	-	-	-	1	1	-	-	1	-	-	-	2	1	-	-	-	-	-	-	-	-	12	3
-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	2
-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	4	1
-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1
35	19	9	4	3	1	60	9	161	26	47	22	13	3	26	16	314	229	63	19	2	1	14	6			2221	744

The same is true as regards New York. See Table, p. 562. Thus, the greatest mortality occurred in the week ending July 21st, when the total mortality was 1409 against 299, the mortality of the corresponding week in 1848. The mortality from cholera was 714, and the total mortality from bowel complaints was 1011. If we subtract the number of deaths from cholera from the whole mortality from bowel complaints, it leaves 297 against 90 the preceding year; and if we subtract the mortality from bowel complaints from the entire mortality, it gives the mortality from other diseases, 398 against 209 for the corresponding week of last year.

The same rule likewise holds good as regards Boston. See Table, p. 563.

PHILADELPHIA.

1848.										1849.									
Week ending.	Total mortality.	Cholera asphyxia.	Cholera infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammation of stomach and bowels.	Other diseases of stomach and bowels.	Total from bowel complaint.	Week ending.	Total mortality.	Cholera asphyxia.	Cholera infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammation of the stomach and bowels.	Other diseases of stomach and bowels.	Total from bowel complaint.
June 3	130	0	6	1	1	0	6	0	14	June 2	138	3	3	1	3	2	3	0	15
" 10	165	0	16	3	3	4	5	5	36	" 9	130	3	0	1	2	2	5	1	14
" 17	181	0	22	1	6	5	5	1	30	" 16	119	5	6	3	4	1	1	0	20
" 24	244	0	45	3	4	16	7	1	76	" 23	184	14	20	5	2	31	3	1	48
July 1	220	0	48	3	5	13	10	2	81	" 30	343	80	40	9	13	15	8	2	167
" 8	228	0	53	3	10	11	5	7	89	July 7	404	170	53	11	13	14	8	0	269
" 15	208	0	41	4	4	20	10	3	82	" 14	458	179	57	6	15	29	4	3	293
" 22	182	0	33	3	5	14	12	0	67	" 21	505	195	68	5	12	28	14	5	327
" 29	194	0	34	2	8	20	4	0	68	" 28	415	136	58	3	10	38	8	1	254
August 5	160	0	35	1	2	7	9	1	55	August 4	360	95	54	9	12	40	5	3	218
" 12	174	0	21	0	8	20	4	3	56	" 11	303	40	46	1	13	42	4	3	149
" 19	174	0	21	1	10	16	8	2	58	" 18	328	42	56	5	18	40	3	3	167
" 26	154	0	19	0	2	17	7	3	48	" 25	248	16	32	2	12	46	7	6	121
September 2	168	0	13	0	4	17	6	3	43	September 1	231	18	23	2	10	39	6	2	100
" 9	134	0	16	0	4	10	5	4	39	" 8	214	16	14	2	8	29	3	1	73
" 16	132	0	10	0	6	9	2	4	31	" 15	207	4	11	0	8	28	9	4	64
" 23	135	0	5	0	1	14	8	1	29	" 22	183	6	9	2	4	23	4	0	48
Totals	2983	0	438	25	83	213	113	40	902	Totals	4770	1022	550	67	159	447	95	35	2347

History of the Asiatic Cholera at Quarantine, Staten Island, New York, in Dec. 1848, *and Jan.* 1849. By John W. Stirling, M. D., Assistant Physician Marine Hospital. (*New York Journ. Med.*, July, 1849.)—In our number for April last, p. 463, we gave a summary of the interesting account by Dr. Whiting, of the appearance of cholera at Staten Island. It will be remembered that the disease first presented itself on board the ship New York, which arrived from Havre on the 2d of December, 1848, and that the disease was confined to the crew, and a few of the patients at the quarantine station. In the present paper, Dr. Sterling presents some particulars in relation to the course of the cholera at quarantine, which are of great interest in reference to the question of the mode of reduction of the disease. He states:—

"On the 2d and 3d of December, 11 patients were sent up to the hill hospitals, with their effects, directly from the ship New York, labouring under the cholera. On the afternoon they were transferred, with the exception of two of them deceased, to the cholera hospital at the public stores. The disease did not reappear at these upper hospitals (notwithstanding 94 convalescents, who had been for several days in contiguity with the German and French emigrants, were distributed throughout their wards, then crowded with patients, on the 6th of December) until the 20th of said month; whilst it appeared in the lower hospital, adjacent to the water, on the 10th of December, to which hospital six convalescents only were sent. Besides, when it did break out in the lower hospital, it did not originate with the convalescents admitted, nor in the ward in which they were located, but in the story below it, and on the opposite side of the building, and afterwards skipped about from ward to ward, without any regard to contiguity, until it reached its acmé.

"There was one very mysterious circumstance noticed in the late visitation of the cholera at quarantine, if we view it with the eye of the contagionist; I allude to its restricted limitation, or insulation. By this I mean to imply that the cholera was confined to the quarantine enclosure. It did not overleap its barriers. Notwithstanding more than one hundred of the emigrants landed from the ship New York, scaled the walls and fled to the city, or adjacent villages, this disease would not accompany them; neither did the numerous visiters, whom curiosity or humanity incited to visit the hospitals, receive or convey it. Also, as I am credibly informed, as soon as these emigrants were brought from the vessel, so soon did the cholera abandon it. The crew, who remained on board, who scrubbed and cleaned the planks, broke up the bunks in which the steerage passengers had slept for weeks, and ventilated and fumigated the hold or between decks, did not contract the disease, but remained quite healthy. The cabin passengers, who, with one of the steerage, went direct to the city, with their effects, did not suffer from the disease, nor communicate it to others. From the foregoing, then, we are naturally brought to the conclusion that, if the cholera be contagious, a peculiar constitution of the atmosphere must exist in order to favour its propagation."

Dr. Sterling notices the striking coincidence between the manner of introduction and duration of the cholera at New Orleans, and its visitation at the quarantine station;* and with justice states that these "tend strongly to corroborate the opinion, that the cholera can be introduced into a country by vessels from remote parts, and when so introduced propagated by contagion; an opinion gaining ground daily with some of our most enlightened physicians, even of those whose views were diametrically opposite in 1832.

"There is, certainly, in the mode of introduction of the cholera in these two places, much to stagger the belief of the non-contagionist, while the testimony on the part of the contagionist is thereby strengthened; yet, if we sift the matter thoroughly, we will find that there was a fortuitous concurrence of incidents well calculated to throw doubt on the one side, while at the same time it confirmed the faith of the other.

"The cholera had already prevailed in Europe for a considerable length of time. Its march was still onward and westward, and as it advanced, according to those who have watched its journeyings, at the rate of 300 miles per month, or thereabouts, we had ground for the belief that it was not far distant.

---

* See Dr. Fenner's account of the former, in the April number of this Journal, p. 541, *et seq.*, and of the latter, the same number, p. 463.

New York. The following table exhibits the weekly mortality in the city of New York during the past nineteen weeks, showing the total mortality, and that from bowel complaints during that period, and also the same during the corresponding periods of last year. It will be perceived that New York has suffered very seriously from this visitation of disease.

NEW YORK.

1848.										1849.									
Week ending.	Total mortality.	Cholera asphyxia.	Cholera infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammation of the stomach and bowels.	Other diseases of stomach and bowels.	Mortality from bowel complaint.	Week ending.	Total mortality.	Cholera asphyxia.	Cholera Infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammation of stomach and bowels.	Other diseases of stomach and bowels.	Mortality from bowel complaint.
May 20	285	0	2	0	3	5	14	2	26	May 19	323	1	0	6	5	6	10	1	29
" 27	247	0	5	0	4	4	11	2	26	" 26	294	13	0	1	4	3	16	0	37
June 3	228	0	4	0	2	4	6	1	17	June 2	270	29	2	9	11	6	11	1	69
" 10	245	0	4	2	1	7	8	0	22	" 9	409	121	4	12	17	11	13	3	181
" 17	250	0	7	0	5	4	19	2	37	" 16	425	145	5	13	4	1	15	0	183
" 24	263	0	8	0	7	5	9	1	30	" 23	473	152	10	10	10	13	16	0	211
July 1	288	0	22	0	8	11	13	1	55	" 30	734	286	34	15	17	18	18	1	389
" 8	285	0	29	0	10	18	19	0	76	July 7	702	317	31	10	25	25	7	0	415
" 15	284	0	26	4	13	24	18	2	83	" 14	991	484	64	18	55	44	14	1	680
" 22	299	0	29	1	19	26	14	1	90	" 21	1409	714	102	34	61	71	29	0	1011
" 29	403	0	52	6	19	44	20	1	142	" 28	1352	692	108	24	49	79	16	2	970
August 5	368	0	44	3	12	41	19	1	120	August 4	1278	678	105	20	54	58	26	3	944
" 12	338	0	52	1	22	41	14	2	132	" 11	1011	423	86	19	64	68	21	2	683
" 19	351	0	46	0	10	46	13	0	115	" 18	968	387	98	13	55	78	18	3	652
" 26	331	0	37	2	18	34	12	1	104	" 25	749	233	67	8	52	78	17	6	461
September 2	309	0	31	1	20	37	17	0	106	September 1	687	171	68	3	40	79	11	3	375
" 9	278	0	22	2	11	33	14	1	83	" 8	520	94	47	4	24	87	12	1	239
" 16	282	0	27	1	13	38	14	0	93	" 15	378	36	23	0	21	65	12	3	160
" 23	261	0	17	0	7	22	7	3	56	" 22	366	21	19	1	14	55	16	2	128
Totals	5595	0	474	23	204	444	261	21	1413	Totals	14,339	4997	873	220	582	837	298	32	7817

Boston. The following table shows the weekly mortality for the past thirteen weeks, with that from cholera and other bowel affections, and the same for the corresponding periods of last year.

BOSTON.

1848.										1849.									
Week ending.	Total mortality.	Cholera asphyxia.	Cholera infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammation of the bowels.	Diseases of the bowels.	Total from bowel complaints.	Week ending.	Total mortality.	Cholera asphyxia.	Cholera infantum.	Cholera morbus.	Diarrhœa.	Dysentery.	Inflammations of the bowels.	Diseases of the bowels.	Total from bowel complaints.
July 1	62	0	2	0	0	0	0	4	6	June 29	88	2	1	1	1	2	2	0	9
" 8	53	0	0	0	1	2	0	2	5	July 6	74	2	3	3	1	2	2	0	13
" 15	48	0	0	0	0	2	2	2	6	" 13	69	13	1	0	2	1	4	0	21
" 22	71	0	5	1	2	3	0	15	26	" 20	119	15	2	1	2	3	5	7	35
" 29	101	0	8	1	0	13	0	28	50	" 27	105	10	4	3	4	3	2	13	39
August 5	92	0	5	2	3	3	2	30	45	August 4	157	52	7	4	4	13	2	10	92
" 12	119	0	7	1	0	8	2	41	59	" 11	240	94	4	4	9	20	2	33	166
" 19	109	0	3	0	0	21	0	43	69	" 18	257	111	4	1	13	21	0	31	181
" 26	111	0	1	2	1	23	0	43	68	" 25	215	75	7	6	12	13	1	22	136
September 2	108	0	4	0	2	18	0	34	58	September 1	236	94	3	7	5	28	0	31	168
" 9	97	0	0	0	0	25	0	28	53	" 8	205	61	7	1	17	34	0	23	143
" 16	89	0	4	0	5	24	0	9	42	" 15	160	42	6	0	3	21	0	21	96
" 23	101	0	3	0	0	22	1	20	46	" 22	149	22	7	2	4	26	1	14	82
Totals	1161	0	42	7	14	164	7	299	533	Totals	2174	294	56	33	84	207	21	205	1181

Cholera in New Orleans.—Dr. J. C. Simonds gives, in the *Charleston Medical Journal* (Sept. 1849), some interesting statistical statements respecting the cholera in New Orleans, from which we glean the following:—

On the 12th December, 1848, the first death from cholera occurred at the Charity Hospital, in the person of a woman who had the day previous arrived in the city on the ship Swanton. Prior to that date our city was perfectly and unusually healthy. Notwithstanding the very large number of strangers in the city, in addition to our own citizens, the reports for the two preceding weeks present the very low figures 44 and 68 for the total interments. During the preceding part of the month, no *death* from cholera morbus had been reported in this city or Lafayette, nor had any increase been observed in the number of cases of dysentery and diarrhœa. Of 143 deaths occurring in this city and Lafayette, during the first 11 days of December, only 17 were attributed to diarrhœa and dysentery, both acute and chronic; a less proportion could scarcely be expected during the non-existence of an epidemic. After having swept away about 4000 victims during seven months, it has ceased its ravages, and has left the city as healthy, as it was at its invasion.

Official Weekly Reports of the Board of Health.[*]

Week ending		Cholera.	Other dis.	Total.
Dec.	2,	—	48	48
	9,	—	48	48
	16,	26	90	116
	23,	234	117	351
	30,	538	124	662
Jan.	6,	392	160	552
	13,	156	127	283
	20,	110	96	206
	27,	no report		
Feb.	3,	53	89	142
	10,	86	91	177
	17,	64	93	157
	24,	4	70	74
Mar.	3,	25	87	112
	10,	50	112	162
	17,	204	92	296
	24,	204	92	296
	31,	238	140	378
April	7,	116	109	225
	14,	73	124	197
	21,	101	131	232
	28,	70	107	177
May	5,	114	111	225
	12,	127	108	235
	19,	103	99	202
	26,	95	98	193
June	2,	69	51	120
	9,	82	100	182
	16,	66	87	153
	23,	47	71	118
	30,	32	81	113
July	7,	15	77	92
	14,	4	94	98
	21,	—	94	98
	28,	2	64	66
Aug.	4,	1	85	86
Totals,		3548	3399	6963

In the preceding table is included the deaths in the Charity Hospital. The total interments in the Lafayette Cemetery, during the same period, not included in the reports of our Board of Health, amount to 1305, of which 739 are stated to have died in New Orleans.

Interments in the Lafayette Cemetery, from December 1848, *to July,* 1849, *inclusive.*

	Cholera.	Other dis.	Total.
Dec.,	43	69	112
Jan.,	33	50	83
Feb.,	14	50	64
March,	111	77	188
April,	60	86	146
May,	118	119	237
June,	108	261	369
July,	7	99	106
	494	811	1305

The following table, compiled with great care from original sources, as far as possible, shows accurately the progress of the disease, presenting the daily interments, and specifying those from cholera, during the months of December and January. The difficulty of obtaining the details in a form suitable for analysis, except by the expenditure of an undue amount of time and labour, has prevented an extension of the investigation through the whole period of the existence of cholera in this city.

---

[*] During parts of December and January the reports of the Board were published daily, the figures given have therefore been collected from the daily reports. It may be observed that these figures do not correspond with those given in the New-Orleans Medical and Surgical Journal, but we have given the preference to *official* doccuments.

Daily Statement of Deaths from Cholera and other Diseases in New Orleans and Lafayette, during the Months of Dec. 1848, *and Jan'y* 1849.

	Cholera.	Other dis.	Total.
Dec. to 11,	..	143	143
Dec. 12,	1	19	20
13,	1	12	13
14,	3	25	28
15,	4	18	12
16,	17	16	33
17,	10	20	20
18,	31	11	52
19,	40	29	69
20,	51	22	73
21,	47	27	74
22,	89	23	112
23,	74	13	87
24,	66	10	76
25,	82	27	109
26,	58	19	77
27,	106	22	128
28,	87	17	104
29,	71	19	90
30,	62	19	81
31,	82	26	108
	982	547	1529
Jan'y. 1,	88	24	112
2,	64	28	92
3,	38	31	69
4,	33	24	57
5,	31	22	53
Jan'y 6,	25	24	49
7,	29	26	55
8,	31	31	62
9,	21	16	37
10,	13	13	26
11,	23	24	47
12,	24	20	44
13,	22	15	37
14,	19	18	37
15,	13	11	34
16,	16	18	34
17,	16	12	28
18,	19	16	35
19,	12	8	20
20,	15	16	31
21,	10	11	21
22,	12	18	30
23,	8	14	22
24,	5	19	24
25,	9	15	24
26,	8	17	25
27,	10	22	32
28,	14	19	33
29,	5	12	17
30,	9	13	22
31,	13	24	37
	1638	2137	1775

Missouri, *St. Louis.*—The following table, compiled from the Register's office, shows the whole number of interments in the cemeteries of this city, from the 23d of April, to the 6th of August. The period embraced is a little over one hundred days, and the aggregate of deaths is 6000! And this in a population of 90,000, at the most! For the week ending

	Total.	Cholera.	Under 5 years.
April 30,	131	41	50
May 7,	135	78	18
" 14,	273	185	46
" 21,	192	127	24
" 28,	186	115	44
June 4,	144	75	34
" 11,	283	191	72
" 18,	510	404	106
" 25,	763	589	164
July 2,	903	619	230
" 9,	773	591	192
" 16,	867	639	197
" 23,	442	269	140
" 30,	225	93	94
Aug. 6,	152	34	72
	5989	4060	1493

Ohio, *Cincinnati.*—The official report of the Board of Health of this town, recently issued, states the mortality from all diseases during the months of May, June, July, and August, to have been 6459; that from cholera during the same period was 4114. The number of actual residents of Cincinnati is estimated by the Board of Health not to have exceeded 90,000, and the mortality, therefore, during four months, was equal to $\frac{1}{15}$ of the whole population.

Treatment of Cholera.—Dr. J. B. Pigne, in a paper in the *New Orleans Med. and Surg. Journ.*, July, 1849, on the nature and treatment of the epidemic cholera, as it prevailed in Attakapas, La., in March last, gives the following account of his mode of treating the disease, which he states to have been very successful:—

"The treatment," he says, "which I am in the habit of employing, and which has always succeeded most admirably in every case where the nervous symptoms do not predominate, and even often in this stage of the disease, is as follows: If it were necessary, I could invoke the testimony of seven or eight proprietors of large plantations, amongst whose slaves I have had numerous cases; and also, some of my medical brethren, who have adopted the same mode of treatment, at least the fundamental part of it, could bear witness to its efficacy: ℞. Red oak bark, Peruvian bark, of each, about 10 lbs. Water, about 30 lbs. Boil for half an hour, strain, and keep for use.

"The red oak is preferable, and the bark of both should be taken in preference from the trunk near the roots, and should be used fresh.

"The above decoction forms the basis of my treatment, but the manner of administering it is of importance. The following is the plan I recommend:—

"As soon as I am called to a person suffering from this disease, I begin by giving a small injection of the cop. decoction, and administering half a tumbler by the mouth. In general, this first injection and dose are retained but a few minutes; as soon as they are rejected, I repeat the dose. This second dose is usually retained a quarter of an hour, and I continue repeating it three, four, or even five times, until the vomiting and purging cease. We generally find that each successive dose remains longer on the stomach, and in two instances only was I compelled to administer as many as six; often a single dose is sufficient. By the above treatment, the vomiting, if it had existed, is first arrested, and then the diarrhœa. Some hours after, the patient is often wholly cured; in a certain number of cases, the skin becomes hot and moist. If I find then that the pulse is quick, and especially if it is full, I bleed, even during the perspiration. Twenty-four hours after the arrest of the purging, I give a pretty strong dose of some drastic purgative. I prefer the purgative of leroz (one tablespoonful and a half), and in addition, I make the patient drink every half hour, half a tumbler of the decoction.

"Once the looseness of the bowels arrested, I act according to circumstances; according to the indications presented; bleeding, baths, sedative draughts, etc.

"When not called upon till the cold stage has supervened, I give as above the oak decoction; but to produce reaction, heat of the skin, and warm perspiration, administer every half hour a tablespoonful of the following mixture: ℞. Laudanum, ʒii; Spts. of Ammonia, ʒiv; Sugar, ℥j; Water, ℥iij. M.

"At the same time, the patient is surrounded with hot bricks. (It is essential, notwithstanding the cramps, not to use friction: the heat and sweating are more certain to remove them than friction), and when reaction comes on, I generally bleed, and act according to indications."

Local Treatment of Erysipelas.—The local treatment of erysipelas is a subject of much interest to the profession. Probably there is no question in the whole range of medical discussion, in which there is more contrariety of opinion, and difference in the experience of medical practitioners. Every physician has his peculiar mode of practice, founded upon successful individual experience; and while some are prepared to advocate the non-application of any external means, others are bold to approbate the virtues of a variety of substances as different in their properties as those who may employ them are in their opinions. Some of our best authorities claim great relief from the use of cold applications, while others favour the employment of hot and emollient fomentations. Hog's lard, and simple molasses, have their advocates; buckwheat and rye meal, mercurial ointment, oxide of zinc, creasote, nitrate of silver, tinct. iodine, and other agents of different names and properties, are pressed into service, with equal claims of restorative power. So far as the experience and observation of your present reporters will justify the expression of their opinion, there are no substances in the whole range of the materia medica of equal value in this complaint with the nitrate of silver and the compound tincture of iodine. Probably the weight of recorded testimony is on the side of the former agent, although the latter has been fairly tried, and proved, by ample experience, to be equally serviceable.

Whether erysipelas requires any local treatment at all, is a question, in the minds of many judicious and skillful practitioners, that is yet unsettled. The disease is asserted to be dependent upon a morbid condition of the blood, and the constitutional injury arising from this change, it is said, can only be repaired by means that are calculated to improve the vital fluid, or to secure the abstraction of a portion of it from the body; but, whatever may be the pathological condition of the blood, experience proves most conclusively that sedative external remedies exercise a controlling power over the cuticular inflammation, which cannot be exerted without them.

The cutaneous disease is occasionally the only morbid change which is exhibited by post-mortem examinations; and there is much reason to believe that the property of contagion, which belongs to the malady, resides in the inflamed and often abraded surface. When the inflammation is seen involving the face and head, rapidly insinuating itself toward the inlets of the brain, with sacs containing purulent matter presenting themselves upon the inflamed surface, and threatening to attack the sensorium, the question is one of the most solemn import, whether we are justifiable in not employing some direct means for its arrest. To cure disease, is our high calling. If we cannot cure, we are bound to guard, as far as we can, those portions of the citadel that are not the seat of disorder, from being overtaken and destroyed. The simultaneous occurrence of erysipelas and puerperal peritonitis, has often been a subject of interesting and useful inquiry among physicians. There has been no puerperal epidemic disease within the knowledge of your committee; but, as evidence of their being great danger of communicating to parturient females the contagious virus of erysipelas, it may be stated that while recently visiting a patient with this disease, and engaged in making applications to the inflamed part, the writer was called to wait upon a female in labour. Under the apprehension that there might be some danger of communicating the disease, the examinations per vaginam were as few and as rapid as circumstances would justify; but the case being very tedious, and requiring the employment of forceps, the hands were necessarily brought into contact with the mucous coat of the vagina, and though they had been thoroughly washed, the patient barely escaped with her life, from an attack of puerperal fever, attended with an offensive discharge from the uterus, and an acrid secretion from the vaginal walls. The infant, at the age of about two weeks, was seized with a severe attack of erysipelas, invading the head and shoulders, and extending down the back. The integument became extremely indurated, the skin assumed a dark, livid hue, and the little sufferer died on the third day, in a state of coma. A similar case occurred not long since, in the practice of another member of your committee, and the infant died with erysipelas about the nates, between the third and fourth week.—*Report of the Standing Committee for the Western District of the New Jersey Medical Society*, Dr. J. Parrish, Chairman; in *the New Jersey Medical Reporter*, for July, 1849.

Fracture Tables, showing the Results of Treatment in one hundred and thirty-six Cases. By Dr. F. H. Hamilton.—These very interesting tables have been made, the author states, "for the purpose of determining the average results of treatment in fractures. The cases, 136 in number, have been collected from various sources, but in no one instance has a case been admitted which I knew to have been managed by an empiric. A few have been furnished by the Buffalo Hospital of the Sisters of Charity, of the surgical wards of which I have the charge; some from my own private practice; twenty or thirty of the ancient fractures were supplied by the medical students in attendance upon the lectures at Geneva and Buffalo Medical Colleges, in reply to my request that such members of the class as had received fractures would call upon me and permit me to make a record of their cases. These young gentlemen being generally from the better classes of society, it was presumed would have received the best treatment which the country could furnish. The remainder have been obtained casually, or as they have been directed to me for the purpose of examination, by physicians who have themselves treated the cases, and who wished to aid me in my investigations. No case has been sent to me by one physician which had been treated by another. In short, I have sought to make the tables a fair representation of the results of the practice of skillful surgeons, or at least of those who by us are regarded as qualified to practice surgery. If the results are not equal to the expectations of the friends of our science, let them first reflect that no such tables have before been made, and that, whatever opinions they may have entertained, such opinions were not based upon general statistics, but only upon individual experience. I wish them also to examine again their own cases; and if they have relied solely upon the statement of the patients, or of their friends, that no shortening exists, they will find, I think, a great many instances in which a careful and proper admeasurement will prove that both were deceived. A shortening of half an inch in the lower extremities will frequently produce a manifest halt, while, on the contrary, I have seen a shortening of an inch which was entirely concealed in the gait. But especially are both patients and friends liable to be deceived in relation to the shortening of a humerus, or even of a clavicle.

"If any one shall be so ungenerous as to charge that such may be the results of Erie County surgery, but not of American surgery, I reply, that a very large proportion of the patients have come from other counties and States; some from the hospitals of large cities, and that even foreign hospitals have a respectable representation of bad cases.

"The number of fractures is by no means sufficient to warrant positive inferences, but they certainly ought to be regarded as furnishing approximate evidence. We hope that others will occupy themselves in constructing similar tables, by which the fairness of these may be in some manner tested; for we are certainly as desirous as any one that this branch of surgery should not be disparaged.

"Some will be surprised that I have always omitted to mention whether the fracture was oblique or transverse. This is an important condition by which to determine the ease or difficulty of adjustment and retention. But in very few of the ancient fractures could this be ascertained; and I am ready to confess that, with regard to the femur at least, when recently broken, I am not often able to determine positively whether the fracture is transverse or oblique. But as in children the fracture is generally transverse, while in adults it is more often oblique, the age, which is given in each case, will enable the reader to form some opinion as to the frequency of the one or the other."

The following is a *summary* of the cases:—

Ossa Nasi, three cases; of which none are perfect; there being more or less deformity in each case.

Vomer, one case, with lateral displacement.

Inferior Maxilla, whole number five; all in adults; all compound comminuted; all have united. Three are perfect and two imperfect.

Clavicle, total eighteen. Perfect six; imperfect twelve. Two of the six perfect cases are children under eight years. Fifteen occurred near the junction of the outer third with the inner two-thirds; three near the middle. Four were comminuted; fourteen simple. I believe not more than three or four were transverse. All have united. Eight shortened from a quarter of an inch to an inch.

Acromion Process, one case; united by ligament, but use of arm perfect.

Humerus, fourteen. Twelve simple; two compound comminuted; thirteen united, one not united; three shortened from half to three-quarters of an inch. Five perfect; nine imperfect.

Radius, eight. All simple. Five perfect; three imperfect.

Ulna, nine. Seven simple; two compound. Eight perfect; one imperfect.

Radius and Ulna, thirteen. Eleven simple, one compound, and one comminuted. Two not united. Seven perfect; six imperfect.

Ribs, four. All simple. Two perfect; two imperfect.

Posterior Superior Spinous Process of Ileum, one case, and this left the fragment projecting.

Femur, twenty-eight. Seven through the neck; whether within or without the capsule I have not determined in but one instance. The signs are generally too obscure to make a positive diagnosis. Twenty-six simple; two comminuted. Of twenty broken through the shaft, fourteen are shortened from half an inch to two inches. Only two fractures of the shaft of the femur, out of fifteen cases occurring in adults, are perfect. Probably all the fractures through the neck are shortened, but they were not all measured since recovery.

Patella, three. All united by ligament.

Fibula, four. Two perfect; two imperfect.

Tibia, two. One perfect; one imperfect.

Tibia and Fibula, Twenty-two. Seven simple; fifteen compound, or comminuted, or compound and comminuted. Nineteen united; three not united. Twelve shortened from quarter of an inch to an inch and a half. Five perfect; seventeen imperfect.

INDEX.

A.

Abeille, galvanic puncture, 503.
Acetate of lead, poisoning from, 68, 538.
Aconitum napellus, therapeutic action of, 463.
Acupuncture, galvanic, 503.
Addison on structure and formation of blood-corpuscles, 411.
———— process of nutrition demonstrated by microscope, 411.
———— healthy and diseased structure, and the principles of treatment, 411.
Air, change of, as a remedy for spasm of glottis, 476.
—, influences of, on injuries, 688.
Albers microscopic constituents of tubercular deposits, 466.
Alexander & Co., mechanical leech, 207.
American Medical Association, 295.
Amputation for popliteal aneurism, 226.
———— apparent intra-uterine, 523.
———— at shoulder-joint, 549, 551.
Anaphrodisiac, lupulin as, 293.
Anæsthesia, Simpson on, notice of, 196,
Anderson, experiments of Magendie and Bernard on action of medicines, 368.
Aneurism, inguinal, 377.
————, carotid, 348, 381.
———— cured by compression, 235.
———— axillary artery, 499, 500.
———— vertebral artery, 122.
———— popliteal, 226, 502.
———— femoral, 222.
Angina pharyngea, 473.
Aphtha, 290.
Apoplexy of the eye, 241.
Argol and senna leaves, experiments on, 205.
Arsenic, effects of use of in agriculture, 281.
Arterial compression as an antiphlogistic, 219.
Association of medical superintendents of insane, 284.
Astragalus, fracture of, 119.
Atlas, exfoliation of anterior arch of, 220.
Atlee, extirpation of fibrous tumour of ovary, 336.

B.

Bailey's report on the practical operation of the law relating to the importation of spurious drugs, 446.
Batchelder on cholera, 437.
Behrend, dropsy after scarlatina, 473.
Bellingham, treatment of morbus coxæ by mercury, 505.
Bell, methods of ventilating buildings, review of, 129.
Bennett, preparations illustrative of, cure of tubercle in lungs, 466.
———— hydrophobia, 475.
Bernard, sugar found in the blood, kidney, &c., 458.
Bernard, source of sugar in the animal economy, 201.
Births, deaths, and marriages, in Massachusetts, notice of report on, 163.
———————— in New York, notice of report on, 163.
Bismuth, large doses of, in gastro-intestinal affections, 462.
Blatin, treatment of cholera, 261.
Blake, action of poisons, 97.
Blood, sugar found in, 458.
——— composition of salts of, 459.
——— investigation and experiments on, 459.
——— pathological conditions of, in cholera, 253.
——— analysis of, in cholera, 256.
Blood-letting, effects of, in pericarditis, 468.
Bone, repair of fractured, 483.
Boston Society for Medical Improvement, records of, 13.
——— Lunatic Hospital Report, notice of, 188.
Bournonville, cholera treated by chloroform, 550.
Bousquet, simultaneous development of variola and vaccinia, 212.
Bowen, wound of the heart, 551.
Brachial artery, ligature of, 95.
Brainard, ethereal solution of gun cotton for nævi, 655.
Breed, menstruosity, 408.
Bullar, extractum cotyledonis umbilici in epilepsy, 214.
Bulloch, sulphate of amorphous quinine, 205.
Burden, difficult parturition, 519.
Burnett, microscopical appearances in cholera discharges, 283.
Butler Hospital for Insane, 189.

C.

Cartwright on cholera, 437.
Carotid, ligature of primitive, 86, 550.
Cataract, osseous, removal of, 513.
Catarrh of the mouth, 472.
Cæsarian operation, 122.
Catheterism, 68.
Cauterization, effect of, in inoculation with poisons, 211.
Cephalæmatomata, 482.
Cerebral irritation, Squibb on, 383.
Cerebro-spinal meningitis, 35.
Cervix uteri, congestion and erosion of, 243.
Chamberlaine, trismus nascentium, 547.
Channing, etherization in childbirth, 41.
Chassaignac on cephalæmatomata, 482.
Child killed by a drop of laudanum, 554.
Chloroform in traumatic tetanus, 75, 509.
———— in labour, 514.
———— in cholera, 550.
———— deaths from, 276, 278.
Cholera, pathological anatomy of, 528, 533.

Cholera, chloroform in, 550.
——— in the United States, 555.
——— medicines at long intervals in, 536.
——— calomel and carbonic acid gas at short intervals in, 536.
——— at Memphis, 13.
——— 252, 295.
——— pathological appearances in, 252.
——— hypertrophy of Peyer's glands in, 252.
——— pathological condition of the blood in, 253.
——— analysis of the blood in, 253, 256.
——— liquids ejected in, 257.
——— pathology and therapeutics of, 258.
——— absence of the precursory diarrhœa, 259.
——— treatment, 259, 261, 262, 265, 272.
——— effects of remedies in, 261.
——— treatment of in Russia, 272.
————————— Paris, 262.
————————— at Berlin, 537.
——— microscopical appearances in intestinal discharges, 283.
——— Ward on, 289.
——— notices of pamphlets on, 437.
Choreic affections, peculiar forms of, 470.
Chorea, partial, 470.
Chowne, important discovery in ventilation, 543.
Christison, hydrophobia, 475.
Church, spontaneous rupture of uterus, 250.
Churchill, tincture of Indian hemp in sanguineous uterine discharges, 244.
——— iodine in congestion and erosion of cervix uteri, 243.
Clarke, tetanus treated by chloroform, 75.
Common carotid artery, ligature of, 348.
————— ligature of, 550.
Compression in popliteal aneurism, 228.
————— for cure of aneurism, 232, 235.
Condyloid process of occiput, 289.
Contagion, Dickson on, 107.
Cod-liver oil, concealing taste of, 463.
————— in pulmonary consumption, 467.
Coffee in hooping-cough, 477.
Cooper, removal of osseous cataracts, 513.
Cotton's Lectures on Physical Diagnosis, 436.
Cotton, death from meat in glottis, 509.
Counter-openings, 504.
Coup de soleil, 66.
Coventry on cholera, 437.
Cox on cholera, 437.
Cryptogamous origin of fevers, notice of, 168.

D.

Dalton, lead poisoning, 356.
Daphne mezereon, poisoning by berries of, 541.
Day, diseases of advanced life, notice of, 175.
Deafness dependent upon old age, pathology and treatment of, 215.
Decaise, use of nitrate of silver for white swellings, &c., 217.
Delaney, congenital phimosis, 72.
Delivery, sudden death after, 251.
Delvaux, nitrate of silver as a vesicant, 206.
Denham, chloroform in labour, 514.
Diaphragm, ossification of tendon of, 121.
Diarrhœa, chemical pathology of, 199.
Dickson on contagion, 107.
Diday, counter-openings, 504.
Dict, hydrophobia, 475.
Difficult parturition, 519.
Diseases, statistical inquiry as to whether they have, in the course of time, undergone modifications, 541.
Disinfecting apparatus, 544.
Dislocation of metacarpal bone of thumb, 97.
————— spontaneous, of hip-joint, 127.
Dobie, minute structure and mode of contraction of voluntary muscular fibre, 199.
Dropsy after scarlatina, 473.
Dysentery and diarrhœa, spiritus pyroxylicus in, 549.
————— chronic, cured by sulphate of zinc enemata, 63.
Dysmenorrhœa, 548.

E.

Epilepsy, extractum cotyledonis umbilici in, 214.
Erectile tumour, ligature of primitive carotid, 86.
————— ethereal solution of gun cotton for, 555.
Erysipelas and puerperal fever, 391.
————— tincture of iodine in, 392.
————— produced by heat, 392.
————— alliances of, 492.
Ether, deaths from inhaling, 293.
——— local treatment of, 566.
Etherization in childbirth, 41.
Eve, death from inhaling ether, 293.
—— amputation at shoulder-joint, 549.
External iliac, ligature of, 222.
——— carotid, wound of, 550.
Extra-uterine fœtation, gastrotomy, 522.
Eye, inflammation of, from injury, 236.
—— apoplexy of, 241.
—— traumatic lesion of, 242.

F.

Fuller, game poisoned by arsenic used in agriculture, 281.
Femoral aneurism, 222.
——— artery, statistics of ligature of, 313.
Femur, fracture of both condyles of, 118.
Ficimus, treatment of gonorrhœa by vinum colchici, 220.
Fish oil, concealing taste of, 463.
Fort's Practice of Medicine, notice of, 434.
Fox's cases of aneurism, 377.
Fracture of both condyles of femur, 118.
————— astragalus, 119.
———— tables, 567.
Fractured bone, local treatment of, 566.
————— repair of, 483.
Fredericq, concealing taste of fish oil, 463.
Funis, prolapsus of, 249.

G.

Gairdner on gout, review of, 422.
——— pathological anatomy of cholera, 528.
Galvanic puncture, 503.
Garrod, pathological conditions of blood in cholera, 253.
——— pathology and therapeutics of cholera, 258.
Gastrotomy for intra-uterine fœtation, 522.
Geddings, ligature of common carotid, 550.
Generali, uterus bicornis, 522.
Gerdy, case of staphyloraphy, 221.
Glottis, spasm of, 476.
———, piece of meat in, 509.
Glycerine, nature and therapeutic uses of, 461.

Gooch, diseases of women, notice of, 196.
——— midwifery, notice of, 196.
Gonorrhœa, treatment of, by vinum colchici, 220.
Gout, Gairdner on, 422.
Grandidier, hydrometra in an unimpregnated uterus, 249.
Gream, deaths from chloroform, 277.
Gull, alliances of erysipelas, 492.
Gun cotton in nævi, 555.
Guyot, coffee for hooping-cough, 477.

H.

Hamilton, fracture tables, 567.
Hancock, aneurism of axillary artery, 500.
Hansford, new mode of expelling foreign bodies from larynx, 294.
Hartshorne, notes of hospital cases, 63, 388.
Harvey, evils attending excision of tonsils, 219.
Hassal, structure of papillæ of tongue, 198.
Hassal's parasite, 197.
Hays, photophobia from irritation to dental branch of fifth pair of nerves, 291.
Heart, wound of, 551.
Heberlein, experiments on senna and ergot leaves, 205.
Hemicrania treated by quinine and valerian, 63.
Hemorrhage from umbilicus after separation of funis, 525.
Henlé, Hassal's parasite, 197.
Henroz, arterial compression as an antiphlogistic, 219.
Hepatic duct, microscopic examination of contents of, 458.
Herard and Bousquet, simultaneous development of variola and vaccinia, 212.
Hildreth, spasms from prick of a needle, 552.
Hip-joint, spontaneous luxation of, 127.
——— disease, mercury in, 505.
Hooping-cough, coffee in, 477.
Hoffman, prolapsus of funis, 249.
Hohl, prolapsus uteri, 248.
Humerus, new variety of luxation of, 221.
——— dislocation of, with fracture, .
Hunt, medical and general treatment of local diseases in preference to operation, 498.
Hutton, cases of aneurism cured by compression, 235.
Hydrometra in an unimpregnated uterus, 249.
Hydrophobia, 474.

I.

Indian hemp, tincture of, in sanguineous uterine discharges, 244.
Indiana Hospital for Insane, Report of, 195.
Insane Asylum Reports, notice of, 186.
Insane, fourth meeting of Association of Superintendents of, 284.
Intestinal obstructions, nux vomica in, 213.
Intermittent fever, 548.
Intermittent fever in young children, 479.
Injuries, processes of repair and reproduction after, 485.
——— difference between subcutaneous and those open to the air, 488.
Iodine in congestion and erosion of cervix uteri, 243.

J.

Jackson on tea and coffee as diet, 79.
Jacob, inflammation of the eye from injury, 236.
——— sympathetic ophthalmia, 510.
Jaundice, nitrate of silver in, 59.
Jones' microscopic examination of contents of hepatic duct, 458.

L.

Labour, chloroform in, 514.
Lamprey, treatment of cholera at Berlin, 537.
Landereau, traumatic lesion of eye, 242.
Larynx, new mode of expelling foreign bodies from, 294.
Larynx, syphilitic tubercles in, 508.
Leech, mechanical, 207.
Lead poisoning, 356, 538.
——— by acetate of, 538.
Legrand, scrofula and tubercles, analogies and differences, 207.
Le Gros Clark, axillary aneurism, 499.
Lemon-juice in rheumatism, 443.
Ligature of subclavian, for axillary aneurism, 499, 500.
——— external iliac, 222.
——— common carotid, 550.
Liquor amnii and meconium bloody, 267.
Lithotrity and lithotomy, with the use of ether, 47.
Lithotripsy, 388.
Local diseases, medical and general treatment of, in preference to operation, 498.
Löffler, physiological action of nitrate of potassa, 204.
Lucas, case of hydrophobia, 474.
Lupulin as an anaphrodisiac, 293.

M.

Mackenzie, treatment of cholera in Russia, 272.
Malformation, 407, 408.
Malgaigne, new variety of luxation of humerus, 221.
Malgaigne, traumatic pleuro-pneumonia, 215.
Mania-à-potu, 393.
Massachusetts State Lunatic Asylum Report, 187.
McCowan, sudden death after delivery, 251.
McClintock, absence of urea in liquor amnii and fœtal urine, 245.
McGown on cholera, 437.
McLean Asylum for the Insane Report, 186.
McSherry, influence of sea life on health, 404.
Medical Colleges, Statistics of, 554.
Medicines, experiments on action of, 368.
Melæna in young children, 481.
Melicher, apparent intra-uterine amputation, 523.
Memphis, cholera at, 13.
Meningitis, 67.
Menorrhagia, oxide of silver in, 69.
Mental diseases, causes and morbid anatomy of, 209.
Mercier, valvular obstructions as a cause of retention of urine, 218.
Mercury in morbus coxæ, 505.
——— effects of, on pericarditis, 468.
Mettauer, ligature of common carotid, 368.
Mialhe, liquids ejected in cholera, 257.
Miller's Treatise on Parturition, notice of, 433.
Mitchell, cryptogamous origin of fevers, 168.
——— on cholera, 437.
Mohr and Redwood's Practical Pharmacy, review of, 155.

Moir, liquor amnii and meconium bloody, 247.
Monneret, large doses of bismuth in gastro-intestinal affections, 462.
Morbus coxæ, mercury for, 505.
Mouth, catarrh of, 472.
Murray, poisoning by tincture of muriate of iron, 280.
Muscular fibre, minute structure and mode of contraction of voluntary, 199.

N.

Nævi, solution of gun cotton for, 555.
Needle, spasms from prick of, 552.
Neill, condyloid process of occiput, 289.
Neill's contributions to pathological anatomy, 118.
Neuralgia, 63.
——— relieved by venesection, 63.
——— intermittent, with two weeks interval, 64.
New York State Lunatic Asylum Report, notice of, 191.
New Jersey State Lunatic Asylum Report, 193.
Niddrie, calomel and carbonic acid gas at short intervals in cholera, 536.
Nitrate of silver in jaundice, 59.
——— chronic gastritis, 63.
——— potassa, physiological action of, 204.
——— silver as a vesicant, 206.
——— in white swellings, &c., 217.
Norris, poisoning by acetate of lead, 538.
Norris, statistics of the mortality of operations of tying the femoral artery, 313.
Nunn, ligature of external iliac, 222.
Nurses' sore mouth, 290.
Nux vomica in intestinal obstructions, 213.

O.

Oesterlin, chemical pathology of diarrhœa, 199.
Osseous cataracts, removal of, 513.
Ossieur, nux vomica in intestinal obstructions, 213.
Ovary, extirpation of fibrous tumour of, 336.
Oxide of silver in menorrhagia, 69.

P.

Page, lupulin as an anaphrodisiac, 293.
——— amputation at shoulder-joint, 551.
Paget, repair of fractured bone, 483.
——— processes of repair and reproduction after injuries, 485.
——— difference between subcutaneous injuries and those open to the air, 488.
——— modes of healing of open wounds, 489.
Papillæ of tongue, structure of, 198.
Paracentesis thoracis in pneumothorax, 216.
Parkman, records of Boston Society for Medical Improvement, 35.
Paralysis, local, 68.
——— of bladder treated by cold injections, 68.
Parchappe, cauterization in inoculation with virulent poisons, 211.
Parturition, Smith on, notice of, 179
Peebles, nitrate of silver in jaundice, 59.
Peacock, epidemic catarrhal fever of, 1847–8.
——— review of, 148.
Pennsylvania Hospital for the Insane Report, notice of, 193.
Pericarditis, treatment of, effects of blood-letting and mercury in, 468.
Pertussis, coffee for, 477.
Pfeufer, catarrh of the mouth, 472.
Phimosis, congenital, 72.
Photophobia, from irritation of branch of fifth pair of nerves, 291.
Phthisis pulmonalis without symptoms, 68.
Pignè, treatment of cholera, 565.
Piorry, spinal meningitis, 208.
Pirre-Aubinais, puerperal tetanus, 246.
Platner and Pignacca, poisoning by sulphate of zinc, 279.
Pleuro-pneumonia, traumatic, 215.
Pneumothorax, paracentesis thoracis in, 216.
Poisoning by sulphate of zinc, 279.
——— tincture of muriate of iron, 280.
——— acetate of lead, 356, 538.
——— berries of daphne mezereon, 541.
Poisons, effect of cauterization in inoculation with, 211.
———, action of, 97.
Poisoned game, 281.
Polli, experiments on human blood, 459.
Polydipsia, 210.
Popliteal aneurism communicating with knee-joint, 226.
——— cured by compression, 228.
Popliteal aneurism, 502.
Practical Pharmacy, Mohr and Redwood's, review of, 155.
Prival, twins born after an interval of twenty-one days, 247.
Prolapsus uteri, 248.
——— of funis, 249.
Provencal, sugar as an antiphrodisiac, 203.
Puerperal tetanus, 246.
——— peritonitis, 388.
——— fever, 389.
——— and erysipelas, 391.
Purpura, 392.
Pseudo-membranous laryngitis, 545.
Psoriasis, 392.

Q.

Quain's Human Anatomy, notice of, 157.
Quinine in intermittent fever, 64.

R.

Raiken, pathological anatomy of cholera, 533.
Ramsay, spontaneous dislocation of hip-joint, 127.
Ramsey on cholera, 437.
Ray, hemorrhage from umbilicus after separation of the funis, 525.
Rees, lemon juice in rheumatism, 443.
Renal calculus in both kidneys, 120.
Renault, period required for absorption of virus, 211.
Repair and reproduction, processes of after injuries, 485.
Rheumatism, lemon juice in, 443.
Ricord, syphilitic tubercles in the larynx—tracheotomy, 508.
Rilliet, melæna in young children, 481.
Robertson, analysis of blood in cholera, 256.
Roberton, spasm of glottis, 476.
Roe, paracentesis thoracis in pneumothorax, 216.

S.

Sargent, cerebro-spinal meningitis, 35.
Scarlatina, dropsy after, 473.
Schwebes, poisoning by berries of daphne mezereon, 541.

Scrofula and tubercle, analogies and differences, 207.
Sea life, influence of, on health, 404.
Senna and argol leaves, experiments on, 205.
Seton, 67.
Serres, influence of physical agents on variola, 213.
Shanks on cholera at Memphis, 13.
Shipman, Cæsarian operation, 122.
———, imperforate vagina, 401.
Shoulder-joint, amputation at, 549, 551.
Sibson, deaths from chloroform, 276.
Simpson on anæsthesia, 196.
Smith on parturition, notice of, 179.
Snow, deaths from chloroform, 274, 278.
Spasm of glottis, 476.
Spermatozoa, development and functions of, 197.
Spiritus pyroxylicus in diarrhœa and dysentery, 549.
Spinal meningitis, 208.
Staphyloraphy, 221.
Sterility, ovaritis and inflammation of Fallopian tubes as a cause of, 250.
Strangulated inguinal hernia, operation under influence of chloroform, 90.
Streeter on cholera, 259.
Subclavian, ligature of, 499, 500.
——— artery, aneurism cured by galvanic puncture, 503.
Suffocation from meat in glottis, 509.
Sugar, source of, in the animal economy, 201.
——— as an antiphrodisiac, 203.
——— found in the blood, kidney, &c., 458.
Suits for malpractice, 395.
Sulphate of amorphous quinine, 205.
Sulphate of zinc, poisoning by, 279.
Squibb on cerebral irritation, 383.
Syme, dislocation of humerus with fracture, 504.
Syphilitic tubercles in larynx, 508.
Sympathetic ophthalmia, 510.

T.

Taylor, treatment of pericarditis, effects of bleeding and mercury in, 468.
Tea and coffee as food, 79.
Tessier, therapeutic action of aconitum napellus, 463.
Tetanus, 392.
——— treated with chloroform, 75.
Thweatt, oxide of silver in menorrhagia, 69.
Tilt, subacute ovaritis, &c., as a cause of sterility, 250.
Tincture of Indian hemp in sanguineous uterine discharges, 244.
——— of muriate of iron, poisoning by, 280.
Todd, choreic affections, 470.
——— symptoms of partial chorea, 470.
Tongue, structure of papillæ of, 198.
Tonsils, evils attending the excision of, 219.
Townsend, internal mechanical obstruction, 546.
Toynbee, pathology and treatment of the deafness attendant upon old age, 215.
Traumatic pleuro-pneumonia, 215.
——— tetanus, chloroform in, 509.
Trask's surgical cases, 86.
Trismus nascentium, 547.
Trugien, congenital deficiency of superior portion of cranium, 407.
Tubercle and scrofula, analogies and differences, 207.
Tubercles in lungs, preparations illustrative of cure of, 466.
Tubercular meningitis, 395.
——— deposits, microscopic constituents of, 466.
Tueffard, extra-uterine fœtation, 522.
Tufnell, femoral aneurism, 222.
——— popliteal aneurism cured by compression, 228.
——— on objections to compression for cure of aneurism, 232.
Twins born after an interval of twenty-one days, 247.
Typhus fever, 65.
Typhoid fever, 66.

U.

Umbilicus, hemorrhage from, after separation of funis, 525.
Urea, absence of, in liquor amnii and fœtal urine, 245.
Urine, valvular obstructions as a cause of retention of, 218.
Uterus, complete inversion and expulsion of, 126.
——— spontaneous rupture of, 250.
——— bicornis, 522.
——— retroversion of, during pregnancy, 522.

V.

Vagina, imperforate, 401.
Valleix, intermittent fever in young children, 479.
Valeix, statistical inquiry whether diseases have, in the course of time, undergone modifications,
Valvular obstructions as a cause of retention of urine, 218.
Van Bibber, pseudo-membranous laryngitis, 545.
Van Heugel, retroversion of uterus during pregnancy, 522.
Vanoye, excessive dose of nitrate of potassa, 204.
Variola and vaccinia, simultaneous development of, 212.
——— influence of physical agents on, 213.
Velpeau, angina pharyngea, 473.
Ventilation, review of treatises on, 129.
——— important discovery in, 543.
——— Chowne on, 543.
Verdeit, composition of salts of blood, 459.
Vertebral artery, aneurism of, 122.
Vigla, polydipsia, 210.
Vinum colchici, treatment of gonorrhœa by, 220.
Virchow, pathological appearances in cholera, 252.
Virginia Western Asylum Report, 194.
Virus, period required for absorption of, 211.

W.

Wade, exfoliation of anterior arch of atlas, 220.
Wagner and Leuckardt, development and functions of spermatozoa, 197.
Ward, cholera, 289.
——— dysmenorrhœa, 548.
——— intermittent fever, 548.
Ware, nurses' sore mouth, 290.
——— aphtha, 290.

Warren, lithotrity and lithotomy, with the use of ether, 47.
Watt's disinfecting apparatus, 544.
Webster, causes and morbid anatomy of mental diseases, 209.
West's Lectures on Diseases of Children, notice of, 436.
White swellings, nitrate of silver for, 217.
Williams, cod-liver oil in consumption, 467.
Wood, on suits for malpractice, 395.
——— expulsion of a bag of waters before rupture of membranes, 247.
Wounds, modes of healing of open, 489.
Wright, popliteal aneurism, 502.
Wyman, treatise on ventilation, review of, 129.

Y.

Yandell, spiritus pyroxylicus in dysentery and diarrhœa, 549.
Yardley, complete inversion and expulsion of uterus, 126.

UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT.

SESSION OF 1849-50.

The Lectures will commence on Monday, the 1st day of October, and be continued under the following arrangement, to the end of March ensuing.

Theory and Practice of Medicine, - - -	By Nathaniel Chapman, M. D.
Anatomy, - - - - - - - - - -	" William E. Horner, M. D.
Materia Medica and Pharmacy, - - - -	" George B. Wood, M. D.
Chemistry, - - - - - - - -	" James B. Rogers, M. D.
Surgery, - - - - - - - - - -	" William Gibson, M. D.
Obstetrics and the Diseases of Women and Children,	" Hugh L. Hodge, M. D.
Institutes of Medicine, - - - - - -	" Samuel Jackson, M. D.

Clinical Instruction at the Pennsylvania Hospital, by the Physicians and Surgeons of the Institution.

Demonstrative Instruction in Medicine and Surgery, twice a week, by the Professors of the Medical Faculty, assisted by W. W. Gerhard, M.D., and Henry H. Smith, M. D.

The rooms for Practical Anatomy will be open from October 1st to the end of March ensuing. John Neill, M. D., Demonstrator.

Amount of Fees for Lectures in the University, - - - - - -	$105
Matriculating Fee (paid once only), - - - - - - - -	5
Hospital Fee, - - - - - - - - - - - - - -	10
Practical Anatomy, - - - - - - - - - - - -	10
Graduating Fee, - - - - - - - - - - - - - -	30

The Commencement will take place early in the following April.

W. E. HORNER, M. D., *Dean of the Medical Faculty.*
386 *Chestnut Street, above Thirteenth, opposite the U. S. Mint.*

Philadelphia, June 1st, 1849.

UNIVERSITY OF NEW YORK.

MEDICAL DEPARTMENT—SESSION 1849-50.

The Lectures of the regular winter course will begin on Monday, October 29th, and be continued to the last of February.

Valentine Mott, M. D., Prof. of Surgery.
Granville S. Pattison, M. D., Professor of Anatomy.
Samuel H. Dickson, M. D., Professor of the Practice of Medicine.
Martyn Paine, M. D., Professor of the Institutes of Medicine and Materia Medica.
Gunning S. Bedford, M. D., Professor of Midwifery.
John W. Draper, M. D., Prof. of Chemistry.

The Surgical Clinique will be held every Saturday by Professor Mott; and the Obstetric Clinique, under the care of Professor Bedford, will commence to furnish cases to matriculated students early in October. The dissecting rooms will open as soon as the weather permits.

Clinical instruction is given at the New York Hospital every day. The Bellevue Hospital, the Eye and Ear Infirmary, and the Dispensaries are also open to students.

The fees for the full Course of Lectures $105. Matriculation fee $5. Practical Anatomy, $5. Graduation fee, $30.

A preliminary and gratuitous course of lectures will be given, as heretofore, in the month of October, commencing on the 8th, and continuing until the regular course begins.

JOHN W. DRAPER, M. D., *Secretary of the Faculty.*

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1849–50.

The regular Course of Lectures will commence on Monday the 15th of October, and continue until the first day of March. The Annual Commencement for conferring degrees will be held *early in March*, instead of at the end of the month, as heretofore.

Robley Dunglison, M. D., Prof. of Institutes of Medicine, &c.
Robert M. Huston, M. D., Prof. of Materia Medica and General Therapeutics.
Joseph Pancoast, M. D., Prof. of Gen., Descriptive, and Surgical Anatomy.
John K. Mitchell, M. D., Prof. of Practice of Medicine.
Thomas D. Mütter, M. D., Prof. of Institutes and Practice of Surgery.
Charles D. Meigs, M. D., Prof. of Obstetrics and Diseases of Women and Children.
Franklin Bache, M. D., Prof. of Chemistry.
Ellerslie Wallace, M. D., Demonstrator of Anatomy.

Every Wednesday and Saturday in the month of October, and during the Course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the class. During the past year, about *fourteen hundred and fifty* cases were treated, and nearly *two hundred* operations performed. Amongst these were many major operations—as amputation of the thigh, leg, &c., lithotripsy, trephining, the operation for strangulated hernia, and tracheotomy.

The Lectures are so arranged as to permit the student to attend the Medical and Surgical practice and Lectures at the Pennsylvania Hospital.

On and after the 1st of October, the dissecting rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES.

Matriculation, which is paid only once,	$5 00
Each Professor, $15,	105 00
Graduation,	30 00

The number of Students during the last session was 477; and of Graduates 188.

R. M. HUSTON, M. D.,
Philadelphia, July 1849. *Dean of the Faculty,* No. 1 Girard Street.

UNIVERSITY OF LOUISIANA—MEDICAL DEPARTMENT.

The annual course of lectures in this institution will commence on Monday, 12th November, 1849, and continue four months.

Theory and Practice,	James Jones, M. D.
Surgery,	Warren Stone, M. D.
Chemistry,	J. L. Riddell, M. D.
Obstetrics and Diseases of Women and Children,	A. H. Cenas, M. D.
Anatomy,	A. J. Wedderburn, M. D.
Materia Medica and Therapeutics,	Gustavus A. Nott, M. D.
Physiology and Pathology,	Thomas Hunt, M. D.
Demonstrator of Anatomy,	Y. R. Le Monier, M. D.

Clinical instruction will be given daily at the Charity Hospital, in the various branches of medicine. The Professors being the attending surgeons and physicians of this extensive institution, during the session of the school, have every opportunity of making their lectures practical and thorough.

The Professor of Obstetrics, having under his control the female wards of the Hospital, is enabled to exhibit to the class those diseases peculiar to the sex, and also to furnish to the senior members as many cases of labour as are necessary to give them a practical acquaintance with this important branch.

The facilities for prosecuting the study of Practical Anatomy and Operative Surgery, are unrivalled.

TERMS.

For the ticket of each professor,	$15 00
Demonstrator's ticket,	10 00
Matriculation fee,	5 00
Diploma fee,	30 00

Lectures and attendance in the Hospital, and subjects for dissection, gratuitous.

GUSTAVUS A. NOTT, M. D., Dean.

UNIVERSITY OF MARYLAND.

The annual course of Medical Lectures will commence on the last Monday in October, at the University Buildings, Lombard Street, Baltimore, and continue until the 15th day of March following.

FACULTY.

Wm. E. A. Aiken, M. D., LL. D., Prof. of Chemistry and Pharmacy.
Nathan R. Smith, M. D., Prof. of Surgery.
Samuel Chew, M. D., Prof. of Therapeutics, Materia Medica, and Hygiène.
Joseph Roby, M. D., Prof. of Anatomy and Physiology.
Wm. Power, M. D., Prof. of Theory and Practice of Medicine.
Richard H. Thomas, M. D., Prof. of Obstetrics and Diseases of Women and Children.
Geo. W. Wiltenberger, M. D., Lecturer on Pathological Anatomy and Demonstrator of Anatomy.

The fee for attendance on the Lectures of each of the Professors is $15. Matriculation fee $5. Graduation fee (including diploma) $20. The ticket of Practical Anatomy is $10, and that of the Lectures on Pathological Anatomy $5. These last are required to be taken but once. Candidates for examination must have attended two full courses in this Institution, or one in this after one in some other respectable school.

With a Hospital, recently much enlarged, and now containing 150 beds attached to the Institution, and consequently under their personal control, the Faculty consider it absolutely essential that every pupil who resorts to the Institution, should avail himself of its advantages. They therefore require, from all candidates for graduation, evidence of attendance upon a course of clinical instruction. The clinical ticket is furnished to all matriculates without charge. Clinical Lectures on Medicine and Surgery are given by the Professors on cases at the Hospital, throughout the session, and the wards visited daily. Surgical operations are frequent, and an abundant opportunity is furnished to students for practical observation and study.

Anatomical *materiel* is abundant, and furnished at a moderate rate. In this respect, it is doubted whether any school in the country can equal the facilities afforded here. The rooms are spacious, well ventilated, warmed, and lighted with gas.

This Institution was chartered in 1807. With large and commodious buildings, an extensive museum, a well-regulated General Hospital, and all the other means adapted for purposes of thorough public instruction, the Faculty see with pleasure, in their yearly increasing classes, the best evidence that a high estimate is placed on the professional education obtained at the University of Maryland.

W. E. A. AIKEN, Dean.

MEDICAL DEPARTMENT OF HAMPDEN SIDNEY COLLEGE,

RICHMOND, VA.

The *twelfth* annual session of this institution will commence on Monday the 23d of October, 1849, and continue until the middle of March ensuing.

R. L. Bohannan, M. D., Obstetrics and Diseases of Women and Children.
L. W. Chamberlayne, M. D., Materia Medica and Therapeutics.
S. Maupin, M. D., Chemistry and Pharmacy.
Charles Bell Gibson, M. D., Surgery and Surgical Anatomy.
Carter P. Johnson, M. D., Anatomy and Physiology.
David H. Tucker, M. D., Theory and Practice of Medicine.
Frederick W. Roddey, M. D., Demonstrator of Anatomy.

Medical and *Surgical Cliniques* will be regularly given in the College Infirmary, and Richmond Almshouse, and ample facilities will be afforded for the study of Practical Anatomy.

Charges.—Matriculation ticket, $5. Professor's fees $105. Practical Anatomy (one course required of the candidate for graduation), $10.

Board, including fuel, lights, and servants' attendance, from $2 50 to $5 per week.

S. MAUPIN, M. D., *Dean of the Faculty.*

COLLEGE OF PHYSICIANS AND SURGEONS, OF THE UNIVERSITY OF THE STATE OF NEW YORK.

The Forty-Third session of the College will be commenced on Monday 15th of October, 1849, and continued until the second Thursday in March, 1850 (commencement day).

Alexander H. Stevens, M. D., LL.D., President of the College, and Emeritus Professor of Clinical Surgery.

Joseph M. Smith, M. D., Professor of the Theory and Practice of Medicine and Clinical Medicine.

John B. Beck, M. D., Professor of Materia Medica and Medical Jurisprudence.

John Torrey, M. D., LL.D., Professor of Botany and Chemistry.

Robert Watts, Jr., M. D., Professor of Anatomy.

Willard Parker, M. D., Professor of the Principles and Practice of Surgery.

Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Alonzo Clark, M. D., Professor of Physiology and Pathology (including Microscopy.)

Charles E. Isaacs, M. D., Demonstrator of Anatomy.

FEES.—Matriculation Fee, $5; Fees for the full Course of Lectures, $96; Demonstrator's ticket, $5; Graduation Fee, $25; Board, average $3 per week.

Clinical instruction is given at the New York Hospital daily, by the Medical Officers (Professor Smith being one of them), fee $8 per annum; at the Eye Infirmary, without fee; and upwards of 1000 patients are annually exhibited to the class in the College Clinique. Obstetrical cases and subjects for dissection are abundantly furnished through the respective departments.

The Annual Commencement is held at the close of the session; there is also a semi-annual examination in September. The requisites for graduation are—21 years of age, three years of study, including two full Courses of Lectures, the *last* of which must have been attended in this College, and the presentation of a Thesis on some subject connected with Medical Science.

In addition to the regular Course, and not interfering with it, a Course of Lectures will be commenced on Monday, 1st October, and continued until the 15th October. This Course will be *free*.

R. WATTS, Jr., M.D., *Secretary to the Faculty.*

College of Physicians and Surgeons,
67 *Crosby Street, New York.*

PHILADELPHIA COLLEGE OF MEDICINE,

Winter Course.

The Winter Course of Lectures will commence on 15th October, 1849, and continue until 1st March, 1850. A preliminary course will be given, commencing on Monday, Oct. 1st, 1849, by the following faculty.

James McClintock, M. D., General, Special, and Surgical Anatomy.
Henry Gibbons, M. D., Institutes of Medicine, and Medical Jurisprudence.
Alfred L. Kennedy, M. D., Medical Chemistry.
Rush Vandyke, M. D., Materia Medica and Therapeutics.
Thomas D. Mitchell, M. D., Theory and Practice of Medicine,
Christian C. Cox, M. D., Obstetrics and Diseases of Women and Children.
James McClintock, M. D., Principles and Practice of Surgery.
M. W. Dickeson, M. D., Comparative and Pathological Anatomy.
Richard Burr, M. D., Prosector of Surgery.
N. R. Mosely, M. D., Demonstrator of Anatomy.

Fee for the full Course, $84. Matriculation, paid once only, $5. Graduation, $30. Fee for those who have attended two full courses in other Colleges, $45. Dissecting ticket, $10. Perpetual ticket, $150.

Full course candidates are furnished with the Hospital ticket without charge. Clinical instruction is also given in the College.

The fee for the respective tickets may be paid to each member of the Faculty, or the whole amount may be paid to the Dean, who will issue a certificate which will entitle the student to the ticket of each Professor.

The Spring Course of lectures will commence about the 19th of March, 1850. Degrees will be conferred about 20th July 1850.

For further information inquire of

JAMES McCLINTOCK, M.D., Dean,
No. 1 N. Eleventh St.

Philadelphia, August, 1849.

PENNSYLVANIA COLLEGE, MEDICAL DEPARTMENT.

NINTH, BELOW LOCUST STREET, PHILADELPHIA.

The Session of 1849–50 will commence on Monday, October 15, 1849, and be continued until the 1st of March, ensuing.

The Faculty is constituted as follows:—

William Darrach, M.D., Professor of the Principles and Practice of Medicine.
John Wiltbank, M. D., Professor of Obstetrics and the Diseases of Women and Children.
Henry S. Patterson, M. D., Professor of Materia Medica and Therapeutics.
William R. Grant, M. D., Professor of Anatomy and Physiology.
David Gilbert, M. D., Professor of the Principles and Practice of Surgery.
Washington L. Atlee, M. D., Professor of Medical Chemistry.

Clinical instruction at the Pennsylvania Hospital, Pine Street, provided for all second course students, at the expense of the Faculty. Fees: Matriculation (to be paid once only), $5 00; for each ticket, $15 00; Graduation, $30 00.

The Registrar's address is No. 92 Arch Street, Philadelphia.

HENRY S. PATTERSON, M.D., *Registrar.*

TRANSYLVANIA UNIVERSITY—MEDICAL DEPARTMENT.

The Thirty-Second Session will open on the first Monday in November next, under the direction of the following faculty, viz.:—

Benj. W. Dudley, M. D., Professor of the Principles and Practice of Surgery.
Robert Peter, M. D., Professor of Chemistry and Pharmacy.
James M. Bush, M. D., Professor of Special and Surgical Anatomy.
Samuel Annan, M. D., Professor of Theory and Practice of Medicine.
Ethelbert L. Dudley, M. D., Professor of General and Pathological Anatomy and Physiology.
Henry M. Bullitt, M. D., Professor of Materia Medica and Therapeutics.
William M. Boling, M. D., Professor of Obstetrics and the Diseases of Women and Children.
H. M. Skillman, M. D., Demonstrator of Anatomy.

The cost of a full course is one hundred and five dollars, invariably in advance. The Matriculation and Library ticket is five dollars. The Dissecting ticket, ten dollars. The Graduation Fee is twenty-five dollars. Boarding and lodging from $2 to $3 per week.

ROBERT PETER, M. D., *Dean of the Faculty.*
Lexington, Ky., June 27, 1848.

PRIVATE OFFICE INSTRUCTION.

The Subscribers receive Students into their office for either the whole, or part of their period of study.

Their pupils receive examinations upon the various branches of medicine *daily, throughout the year*, with the exception of the usual Summer recess. They also have access to the full Course of Summer Lectures at the Philadelphia Medical Institute; likewise to the daily Clinical Course at the Pennsylvania Hospital, from April to November; and enjoy the usual facilities of an office—such as Books, Plates, Preparations, &c.

Fee, for the whole term of study (3 years), in advance, - - - -	$250
" " one year, - - - - - - - - - - - - -	100

JOHN NEILL, M. D., *Demonstrator of Anatomy in the University of Penna.*
JOHN J. REESE, M.D., *Lecturer on Materia Medica in the Phila. Med. Institute.*
Philadelphia, April, 1849.

MASSACHUSETTS MEDICAL COLLEGE.

The Medical Lectures of Harvard University will commence at the Massachusetts Medical College in Boston, on the first Wednesday in November.

Obstetrics and Medical Jurisprudence by	Walter Channing, M.D.
Materia Medica and Clinical Medicine by	Jacob Bigelow, M.D.
Theory and Practice of Medicine by	John Ware, M.D.
Chemistry by	John W. Webster, M.D.
Pathological Anatomy by	John B. S. Jackson, M.D.
Anatomy and Physiology by	Oliver W. Holmes, M.D.
Principles and Operations of Surgery by	Henry J. Bigelow, M.D.

Clinical Lectures at the Hospital three times a week by the professors of Clinical Medicine and of Surgery. Surgical operations are very numerous. The safe and effectual practice of etherization is taught in this School. Practical Anatomy is amply provided for by new and liberal arrangements.

Fees for the whole Course, $80. Matriculation, $3. Dissecting Ticket, $5. Graduation, $20. Hospital and Library gratuitous.

A descriptive pamphlet may be had by application, post-paid, to David Clapp, Printer, corner of Washington and Franklin streets, Boston.

The Tremont Street School for private pupils, having all the advantages of the Hospital, Dissecting Room, and of daily recitations throughout the year on the branches of medical science, is conducted by Drs. Bigelow, Storer, Jackson, Holmes, and H. J. Bigelow, Physicians and Surgeons of the Hospital.

Boston, July 10, 1849.

LECTURES ON SURGICAL ANATOMY AND OPERATIVE SURGERY.

DR. HENRY H. SMITH will commence his Annual Course on the above subjects, on Monday, October 29th, at the Lecture Room in College Avenue, Tenth Street above Chestnut.

The Lectures will be delivered every Monday, Wednesday, and Friday, at 7 P.M., and continued until the 1st of March.

The course will consist in demonstrations on the subject, of all Surgical Operations, with the use of Bandages and Dressings, and each operation will be preceded by a Dissection of the region to be operated on.

Fee, $5.

For Tickets apply at No. 120 South Ninth Street.

THE GREAT AMERICAN MEDICAL DICTIONARY,
NEW AND ENLARGED EDITION.

MEDICAL LEXICON;
A DICTIONARY OF MEDICAL SCIENCE,

CONTAINING

CONCISE EXPLANATIONS OF THE VARIOUS SUBJECTS AND TERMS, WITH THE FRENCH AND OTHER SYNONYMES; NOTICES OF CLIMATE AND OF CELEBRATED MINERAL WATERS; FORMULÆ FOR VARIOUS OFFICINAL AND EMPIRICAL PREPARATIONS, ETC.

BY ROBLEY DUNGLISON, M. D., &c.

SEVENTH EDITION,

CAREFULLY REVISED AND GREATLY ENLARGED.

In One very large and beautifully printed Octavo Volume of over Nine Hundred Pages, closely printed in double columns. Strongly bound in leather, with raised bands.

This edition is not a mere reprint of the last. To show the manner in which the author has labored to keep it up to the wants of the day, it may be stated to contain over SIX THOUSAND WORDS AND TERMS more than the fifth edition, embracing altogether satisfactory definitions of

OVER FORTY-FIVE THOUSAND WORDS.

Lea & Blanchard beg leave to state that the last edition of this valuable work may be found at any of the Medical Book Stores throughout the Union.

Date Due

American journal 1849
of the medical sciences v.18-N.S.

DATE	ISSUED TO

AMERICAN
JOURNAL
OF THE
MEDICAL
SCIENCES
NEW SERIES
vol. 18
1849

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 01224 9397